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PROCEEDINGS

OF THE

Bournemouth Natural Science Society.

VOL. XXVIII.

SESSION 1935-36

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PUBLISHED BY THE SOCIETY AT ITS HOUSE,
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BRITISH MUSEUM
NATURAL HISTORY

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Introductory Note.

THE Bournemouth Natural Science Society was founded in 1903, being the successor to an older society which was formed in 1883 and dissolved in 1897. The early meetings of the Society were held in a room hired from time to time for the purpose, but the need of some fixed quarters was soon felt. To meet this need a small room was taken at 122 Old Christchurch Road, and, as this proved inadequate, in February, 1909, better accommodation was secured at Granville Chambers and retained for four years. In March, 1913, the Society took on lease from the Education Committee a large room on the ground floor of the Municipal College. In 1919 this also had to be given up, and the Society succeeded in acquiring a house of its own, 39 Christchurch Road. The formal opening was on February 7, 1920. In 1929 a Lecture Hall was added, and the ground floor of the old building reconstructed. The work was completed and the New Hall inaugurated on October 14, 1929.

The objects of the Society are declared by the second of its rules to be "the promotion of the study of Science in all its branches, by means of Lectures, Field Meetings, the Reading and Discussion of Papers, and the formation of Sections of its members devoted to any particular branch of the Society's work, and in any way that the Council of the Society shall deem advisable."

The Sections at present working are as follows:— **Archæological and Historical, Astronomical, Botanical, Entomological, Geographical, Geological, Microscopical, Photographic and Record, Physical and Zoological.**

During the WINTER SESSION, from October to April, GENERAL and SECTIONAL MEETINGS are held, comprising Lectures and Demonstrations on subjects of scientific interest, illustrated by lantern slides, diagrams, specimens or experiments.

All meetings are open to all members of the Society.

Throughout the SUMMER SESSION, EXCURSIONS to places of interest in the neighbourhood are arranged and indoor or garden meetings occasionally held.

The management of the Society is vested in a Council, which is elected at the Annual General Meeting, held in October.

The Society possesses a Library available for the use of members. This is yearly becoming more extensive and valuable by the acquisition of standard text books and of books dealing with matters of local scientific interest. Books may, under certain conditions, be borrowed by members, and there is a Reading Room in which works of reference may be consulted.

The Society's collections of archæological, botanical, geological, zoological and other specimens are now arranged in the MUSEUM. Articles on the collections were contributed to Vols. V. X. and XVII. of the Proceedings by Sir Daniel Morris, Mr. W. G. Wallace and Rev. C. O. S. Hatton respectively.

Members are elected by the Council and pay an annual subscription of £1 for full membership (admitting to all meetings and excursions for the year), a subscription of £2 covers four adult members of the same family residing in the same house.

A MONTHLY NOTICE, giving full details of all meetings, etc., is posted to every member before the beginning of each month, and a volume of Proceedings is published every year.

Application Forms for Membership, and further particulars, can be obtained from the

HON. SECRETARY,

Bournemouth Natural Science Society,
39 Christchurch Road,
Bournemouth.

Bournemouth Natural Science Society.

OFFICERS AND COUNCIL FOR 1935-36.

President

HENRY BURY, M.A., F.L.S., F.G.S.

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G. E. J. CRALLAN, M.A., M.B., M.R.C.S.
CLAUDE LYON
MISS MARCIA PENROSE, B.SC.
HEYWOOD SUMNER, F.S.A.
REV. F. C. R. JOURDAIN, M.A., F.Z.S., V.P.B.O.U.

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Deputy-Chairman of Council

REV. F. C. R. JOURDAIN, M.A., F.Z.S., V.P.B.O.U.

Council

THE OFFICERS, AND CHAIRMEN OF SECTIONS (ex-officio)

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MISS M. PENROSE, B.SC.
J. F. SPENCER
H. J. WADLOW
MISS S. WETHERELL
W. J. WOODHOUSE, A.C.P.
G. G. WREN

Chairmen of Sections

Archæological and Historical: PROF. J. CAMERON, M.D., D.SC.
Astronomical: W. GOODACRE, F.R.A.S.
Botanical: L. BEECHING HALL, F.L.S.
Entomological: T. E. BELCHER.
Geographical: CLAUDE LYON.
Geological: HENRY BURY, M.A., F.L.S., F.G.S.
Microscopical: M. McDOUGALL, M.B., B.S.
Photographical and Record: S. WHITAKER.
Physical: W. H. MARSH, B.SC.
Zoological: REV. F. C. R. JOURDAIN, M.A., F.Z.S., V.P.B.O.U.

Hon. Treasurer

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Secretaries

Hon. Secretary: R. QUICK, F.S.A. (Scot.)
Hon. Assistant Secretary: W. J. WOODHOUSE, A.C.P., M.I.H., 29 Twynham Road, Southbourne.
Assistant Secretary: J. F. SPENCER, Glenthorne, Richmond Park Road.

Hon. Librarian

CLAUDE LYON, Shalimar, Wilderton Road.

Hon. Editor

J. R. White, M.A., Whitecot, Linwood Road.

Hon. Curator

B. Gorton, M.R.C.V.S., M.P.S.

Hon. Auditors

F. Broad. J. C. Woods.

Bankers

National Provincial Bank of England, Bournemouth

List of Members.

Revised to 6th November, 1936.

* Honorary Members. † Past Presidents.
o Original Members. l Life Members.
G Morris Gold Medallist. a Associate Members.

The year of election is given before the name of each member.

A

1932	Abbott, A. H.	Portman Cottage, 755 Christchurch Road
1932	Abbott, Mrs.	,, ,, ,, ,,
1935	Abbott, F. E., J.P., C.C.	Shortwood, Christchurch.
1931	Adams, V. J.	7 Holdenhurst Road
1927	Adkins, H.	Glenavon, 107 Alumhurst Road
1935	Ainslie, Capt. M. A., R.N., B.A., F.R.A.S.	Grenville, Talbot Drive, Wallis Down
1934	Allan, Miss M.	6 Chigwell Road
1923	Anderson, Mrs. M.	Ranfurly, 18 Dean Park Road
1933	Andrews, Rev. P. T., M.A.	Foxwold, 34 Belle Vue Road, Southbourne
1933	Anthony, Miss C. H.	75 St. Luke's Road

B

1929	Baker, H. J., F.I.A.	Clifton, Sandbourne Road
1936	Baker, Miss M. E.	3 Penrith Road, Boscombe
1936	Banham, Miss	Southernhay, Cambridge Road
1930	Banks, R. McLachlan, M.B., C.M., D.P.H.	35 Norwich Avenue
1935	Banks, Mrs.	,, ,,
1905	Barlow, E. W., B.SC., F.R.A.S., F.R.MET.S.	Greengates, Wadhurst, Sussex
1912	aBarraclough, A., M.A., F.R.G.S.	93 East Avenue
1936	Barran, Sir Rowland	Rockstead, West Overcliff Drive.
1909	Barratt, J. Hayes	16a St. Augustine's Road
1924	Barratt, Mrs.	,, ,, ,,
1924	Barratt, Miss P. M.	,, ,, ,,
1927	Bater, G. W., B.A.	22 Dingle Road
1927	Bater, Mrs.	,, ,,
1927	Bater, Miss K. J.	,, ,,
1933	Beauchamp, A. H., L.R.I.B.A.	32 Hamilton Road, Boscombe
1931	Beckett, S. J.	Pineville Hotel, West Cliff Gardens
1932	Belcher, T. E.	Trefloyne, Sandringham Road, Parkstone
1920	Bennett, Risdon, M.A	Yew Tree Cottage, Broadstone
1935	Bigg, Mrs. W.	Flat 31, Edmonsham House, Upper Terrace Road
1910	*Bond, F. Bligh, F.R.I.B.A.	454 Gloucester Road, Bristol
1920	Borrett, Surg.-Capt. G. G., R.N.	2 High West Street, Dorchester
1932	Borrow, F.	The Knoll, 281 Charminster Road
1932	Borrow, Mrs.	,, ,,
1929	Bourdass, Miss A.	7 Beaulieu Road
1929	Bourdass, Miss F.	,, ,,

1920	ABourne, Miss C. M.	2 Alexandra Road, West Southbourne
1930*	†Bower, Prof. F. O., D.SC. F.R.S.	2 The Crescent, Ripon
1932	Brett, R. K.	Anglebay, Colehill, Wimborne
1936	Brewitt-Taylor, E. G.	10 Forest Road, Branksome Park
1922	Brewitt-Taylor, Mrs.	,, ,,
1931	Bright, Percy M., J.P.	Nethercourt, 60 Christchurch Road
1926	Broad, F., F.S.I.	Manton Villa, 2 Oxford Road
1928	Broad, Mrs.	,, ,,
1921	Bromley, Miss	81 Lansdowne Road
1935	Brook, E.	10 Dingle Road, Boscombe
1917	Brown, Mrs. Edward	West Ridge, 50 Chessel Avenue
1926	Brown, Lt.-Col. F. Tatton	Talbot Hurst, 3 Glenferness Avenue
1935	Brown, V. A. G.	Flat. 17, Mount Heatherbank, Richmond Gardens
1935	Brown, Mrs. E. J. P.	,, ,, ,,
1924	Browning, Miss E. M.	Brooklands, Dudsbury Avenue, Ferndown
1905	*Brumell, G., A.R.I.B.A. Hon. Member 1933	Maori, 86 Richmond Park Avenue
1920	Brumell, Miss M.	,, ,, ,,
1920	Bryant, Miss M.	Sunnyhill, Hampden Lane, W. Southbourne
1936	Buchanan Miss M.	Chesterwood, Grove Road
1929	Buckingham, H.	6 Bodorgan Road
1929	Burge, J. T.	Glenhurst, Braeside Road, West Moors
1927	Burrell, Mrs. A. E.	Freydan Lodge, Poole Road
1924	Burroughs, F. G.	63 Maxwell Road
1934	Burroughs, Mrs. I. F.	High Bank, Braidley Road
1922	Burton, E. St. John, F.G.S., F.R.S.A.	99 Hankinson Road
1922	†Bury, Henry, M.A., F.L.S., F.G.S.	The Gate House, 17 Alumdale Road
1930	Bury, Mrs.	,, ,, ,,
1930	Bury, Miss G. E.	,, ,, ,,
1930	Bury, Miss G. J.	,, ,, ,,
1935	Butler, F. H.	Waverton, Clifton Road, Southbourne
1935	Butler, Mrs.	,, ,, ,,
1933	Byard, A. G.	2 Alton Chambers, Church Road, Parkstone
1933	Byard, Mrs.	,, ,, ,,

C

1928	Calkin, J. B., M.A.	Wychwood School
1934	Cameron, J., M.D., D.SC.	Balmashanner, Grove Road
1934	Cameron, Mrs. J., J.P.	,, ,,
1919	Cardew, R. K., B.A.	Stafford Lodge, 26 Dean Park Road
1920	Cardew, Mrs.	,, ,, ,,
1932	Carr, Laurence	Newlands, Western Avenue, Branksome Park
1932	Carr, Mrs.	,, ,, ,,
1932	Chambers, W. H.	14 Douglas Road, Southbourne
1912	AChilver, Miss K. M.	2 Shaftesbury Road,
1931	Clark, Miss K. E.	15a St. Mary's Road
1936	Clarke, Miss Bertha, M.A.	64a Parkwood Road
1927	*Clay, R. C. C., M.D., F.S.A.	The Manor House, Fovant, Wilts.
1931	Clegg, J. H.	Mount Pleasant, Bury Road, Branksome Park
1929	Colledge, T. C.	3 Watkin Road, Boscombe
1933	Collings T. G.	54 Parkwood Road
1928	Constantine, M. H.	Brendon, Nairn Road
1935	Cookes, Mrs. L.	Oriel Haven, Victoria Avenue, Winton
1926	Cooper, H. A.	25 Talbot Avenue
1926	LCooper, J. S.	The Little Red House, Colehill, Wimborne

1903†o	Crallan, G. E. J., M.A., M.B., M.R.C.S.	17 St. Anthony's Road
1922	Crallan, Mrs.	,, ,,
1920	Cressey, Miss H.	14 Percy Road, Boscombe
1931	Crocker, Mrs. Walter	Highridge, Ferndown
1935	Cross, Miss F. C.	59 Strouden Avenue
1934	Croucher, Miss J. M.	Little Stanpit, Christchurch
1931	Curgenven, Miss A. J.	6 Suffolk Road
1922	Curme, Miss M. E.	65 Lansdowne Road
1928	Curtis, E. A., L.D.S.	Holm Dene, Poole Road
1928	Curtis, Mrs.	,, ,,
1928	Curtis, E. J. B., L.D.S.	,, ,,
1903*o	Curtis, W. Parkinson, F.E.S. Hon. Member 1922	Richmond Chambers, The Square

D

1927	Dacombe, J M. J.	Gosfield Cottage, Winkton, Christchurch
1933	Daimpré, Rev. I. D. D.	St. Mary's Vicarage, Morden, Wareham
1935	Daimpré, Mrs. G. H.	,, ,, ,,
1932	Davy, Miss M.	6 Twynham Road, Southbourne
1930	de Castro, H.	c/o Mrs. C. Lyon, Shalimar, Wilderton Road
1933	de Castro, Mrs.	2 Alton Chambers, Church Road, Parkstone
1926	de Paiva, Miss E.	Sunny Halt, Hamilton Road, Boscombe
1936	Denton, Miss E.	3 Penrith Road, Boscombe
1935	Derry, Mrs. E. H.	Charnwood, Belle Vue Road, Southbourne
1910	Dodshon, E., LL.B	124 Old Christchurch Road
1928	Drew, Lt.-Col. C. D., D.S.O., F.S.A.	c/o Dorset County Museum, Dorchester
1923	Druitt, Mrs.	Willow Lodge, Mudeford, Christchurch
1925	Druitt, Miss C. M.	99 Lowther Road
1925	Druitt, Miss C. S.	,, ,,
1928	Dundee, Col. W. J., C.I.E., R.E., F.R.G.S.	38 Portchester Road
1926	Dundee Mrs.	,, ,,
1921	Dunn-Gardner, R. C.	24 Queensberry Place, South Kensington, S.W.7

E

1936	Edwards, Charles, M.D.	Lyndon Lodge, 51b Christchurch Road
1936	Edwards, Mrs. H.	,, ,,
1929	Eldridge, Mrs.H.	L'Incontro, 9 Penn Hill Avenue, Parkstone
1935	Elgar, Rev. A. J., F.Z.S.	Forest House, 1 Grove Road
1935	Elgar, Mrs. E. M. K., F.R.G.S.	,, ,,
1935	Elgar, Hugh	,, ,,
1935	Elgar, Ronald	,, ,,
1922	Ellis, Mrs.	10 Forest Road, Branksome Park
1922	Ellis, Miss W. M.	,, ,, ,,
1909	Evans, P. H. L., M.A.	Stirling House, 28 Manor Road
1936	Evans, Mrs. S. E.	Bloomfield, 19 Burton Road, Branksome Park
1927	Exon, C., M.A.	12 Douglas Road, Southbourne

F

1919	Farmar, Mrs. K. A.	Whitton Lodge, Stevenson Crescent, Parkstone
1922	Farmar, Miss E. A.	,, ,, ,, ,,

1934	Fell, Mrs. A. G.	Moorings, Wimborne
1927	Finlinson, F. J.	Daneshill, 85 Queen's Park Avenue
1934	Finnis, Miss F. M.	Riversdale, Poole Road, Wimborne
1903oA	Firbank, Miss, LL.A., A.C.P.	5 Buchanan Avenue
1925	Fountain, E. D., L.R.C.P., M.R.C.S.	Vron, 30 Mansfield Road, Parkstone
1933	Fountain, Mrs.	,, ,, ,,
1922	Fowler, A. R. W., B.A.	Ardmore Lodge, Ardmore Road, Parkstone
1919	Fowler, Miss M. L.	Lerryn, Chessel Avenue, Boscombe
1933	†Freeman, J. P. Williams, M.D.	Curdridge, Botley, Southampton
1923	Fryer, Miss C. H.	Moulton, 46 Wellington Road
1928	Fulcher, L. W., B.SC.	60 Herberton Road

G

1934	Gandy, H. G., C.B.E., D.L., M.A.	Dormy Hotel, Ferndown
1926	Gardiner, H. L.	Granville Court Hotel, East Cliff
1934	Geake, W. E.	6 Hathaway Road, Southbourne
1934	Geake, Mrs.	,, ,,
1934	Gibbons, A.	High Mead, Moreton, Dorchester
1934	Gibbons, Mrs. H. M.	,, ,,
1934	Gill, Miss Ida	4 Windsor Road, Parkstone
1929	Goodacre, W., F.R.A.S.	Waratah, Leicester Road
1931	Goodman, C. H.	8 Foxholes Road, Southbourne
1927	Gorton, B., M.R.C.V.S., M.P.S.	22 Arnewood Road
1921	Gosse, W., M.D., D.P.H.	Langley, Rowlands, Wimborne
1936	Green, J. F. N., B.A., V.P.G.S.	51 Alexandra Grove, London, N.12
1936	AGrice, Miss W.	Wentworth, Boscombe
1936	Grieveson, Miss S.	24 Surrey Road
1917	Grindley, Miss E. J.	67 Princess Road

H

1935	Haddon, Mrs.	63 Wentworth Avenue
1931	Haines, Mrs. E. M.	Appleslade, Ringwood
1929	LHaines, G. E.	602 Christchurch Road, Boscombe
1930	Haines, H. H., C.I.E., F.L.S.	Glyn Cogan, Berriew, Mont.
1931	Haines, Miss E. S.	,, ,,
1924	Hall, L. Beeching, F.L.S.	Bryn Aird, Blake Hill Crescent, Parkstone
1933	Harding, H. F.	Heather Glen, Western Road, Branksome Park
1934	Harding, Mrs.	,, ,, ,,
1934	Harding, G. F.	,, ,, ,,
1934	Harding, Miss G. J.	,, ,, ,,
1913	Harris, Miss K.	Trescott Grange, Harvey Road, Boscombe
1912	Harrison, Henry	Eden Lodge, 7 Surrey Road South
1933	Harrison, H. W.	Green Pasture, Pennington, Lymington
1933	Harrison, Mrs.	,, ,, ,,
1932	Hatcher, F.	Hillcot, Constitution Hill, Parkstone
1932	*Hatton, Mrs.	Dutch House, Cliff Road, Barton-on-Sea
1920	Hawes, Miss	The Moorings, 27 Nelson Road
1917	Haydon, C. J.	Ben Veula, 29 West Cliff Road
1934	Haydon, Rev. J. F., M.A.	Cheyne Court, 37 Surrey Road
1936	Haylock, S., M.D.	Balsham, Clifton Road, Southbourne
1918	Haythorne, E. C. C.	Forest Lodge, Branksome Park
1934	Hellier, M., O.B.E.	Somerset House Hotel, Bath Road
1921	Hellyar, Miss E. F.	Cerne Abbas, 1 Belvedere Road
1932	Hemmy, A. S., B.A., M.SC.	Anarkali, 45 Elgin Road
1917	Henderson, Miss A. J.	Springbank, 22 Fox Road, Greenock

1928	Henderson, Major H. E.	Tall Trees, 21 Wayside Road, Southbourne
1928	Henderson, R. G., M.A., M.B., CH.B. (Aber.), F.R.C.S. (Edin.)	87a Southbourne Road
1932	Henderson, Mrs.	,, ,,
1931	Herklots, H.	Highland House, Highland Road, Barton-on-Sea
1931	Herklots, Mrs.	,, ,,
1923	Hill, C. S.	Northfield, Chigwell Road
1935	Hills, P. N.	Netherhill, Awbridge, Romsey
1930	Hilton-Johnson, Miss C.	12 Oban Road
1924	Hoare, Miss E.	Sea Gate, Cassel Avenue
1929	Hooper, Miss M. N.	Southland, Corfe Castle
1928	Horne, Rev. E. H., M.A.	64 Alum Chine Road
1923	Howell, Mrs. Rees	Cintra, 35a Richmond Wood Road
1925	Humby, H. G.	Brackendene, 23 Wimborne Road
1936	Hunkin, Miss K. A., B.A.	25 Foxholes Road, Southbourne
1927	Hunt, Mrs. F.	33 Stirling Road
1932	Hunt, Mrs. P.	Cone Cottage, 33 Twynham Road, Southbourne
1936	Huntsman, Mrs.	38 Stirling Road
1930	Hurt, Miss C. E. C. J.	Flat 31, Ingleby, 6 Wimborne Road

I

1905	*Ibbett, F. W., M.A. Hon. Member 1920	Alwyn, 32 Lonsdale Road
1926	Innes, A. A.	Old Pines, Ferndown
1925	Insch, J. M.	18 Beechwood Avenue
1925	Insch, Mrs.	,, ,,
1930	Insch, Miss E.	,, ,,
1930	Insch, Miss S.	,, ,,
1934	Isaacs, G.	Melbury, Lindsay Road

J

1926	Jackson, Mrs. C. M.	The Dakota, Beaulieu Road, Alum Chine
1921	Jackson, Mrs. Gidlow	64 Portchester Road
1933	James, Mrs. M. G.	70 St. Alban's Avenue
1930	Jefferys, J. H.	Elpis, 43 Caledon Road, Parkstone
1935	aJellicoe, Miss M.	98 Carbery Avenue
1923	Jenkins, Miss B. M.	7 Talbot Avenue
1932	Jennings, E. W., A.R.I.B.A.	11a The Avenue, Branksome Park
1936	Jervois, Mrs. E.	29 Chessel Avenue, Boscombe
1933	Johnson, Miss A. C.	Rivelin, Avenue Road, Christchurch
1930	Jones, Miss A. Parnell	Menstone, Frankland Crescent, Parkstone
1932	Jones, F. Lindsay	8 Clifton Road, Southbourne
1933	Jones, Dr. Felix	7 Surrey Road
1930	Jones, Mrs. W.	1 Park Road
1927	†Jourdain, Rev. F. C. R., M.A., F.Z.S., M.B.O.U.	4 Belle Vue Road, Southbourne
1930	Jubb, Miss O.	12 Oban Road

K

1910	Kay, A. J.	Valliscourt, 100 Lowther Road
1936	Kearne, S. Lindsay, L.MUS.T.C.L.	56 Fenton Road, West Southbourne
1930	†*Keeble, Sir F. W., K.B.E., D.SC., F.R.S.	Hammels, Boars Hill, Oxford

1929	Kendall, Mrs.	20 Serpentine Road, Poole
1928	Kendall, Miss G. J., A.R.C.M.	,, ,, ,,
1935	Kerslake, F. C.	Pleasant View, Penywern, Neath, Glam.
1935	Keutgen, E.	Hotel Royale, Gervis Road East
1927	Kilburn, Miss Alice M.	9 Glenmoor Road, Winton
1927	Kilburn, Miss Annie	,, ,,
1936	King, Mrs. A.	37 Linwood Road

L

1934	Lawrence, R. L. R.	The Woodlands, Canford, Wimborne
1923	Lawrence, Mrs.	66 Portchester Road
1932	Laxon, E. A.	The Ramblers, Ashley, New Milton
1932	Laxon, Mrs.	,, ,, ,,
1933	Leach, W. J.	43 Browning Avenue, Boscombe
1929	aLee, Miss L., LL.A., F.R.G.S., F.A.G.S.	69 Walpole Road
1930	Lefroy, Mrs.	Campbell House, Campbell Road, Boscombe
1910	Lendrum, Miss A. M.	13 Carysfort Road
1932	Leon, Miss N.	Heelde, Stapehill, Wimborne
1922	Littleboy, Miss E. S.	2 Bodorgan Manor, 30 Bodorgan Road
1923	Littlewood, Engineer Capt. A. W., R.N., Retd., O.B.E., Chevalier Legion of Honour.	28 Princess Road
1928	Longbottom, Mrs.	Haslemere, Penrith Road, Boscombe
1931	Looker, Rev. William, F.G.S.	50 Queen's Park West Drive
1920	aLove, W. J. E.	17 Castlemain Avenue, West Southbourne
1935	Low, Miss R.	Craigdhu, Grove Road
1932	Lowther, F. L.	Lonsdale, Mayfield Avenue, Parkstone
1934	aLowther, Miss D. M., B.SC.	,, ,, ,,
1903o	*Lupton, Miss	The Cottage, St. John's Road, Sandown, I.W.
1910	Lyon, Mrs. C.	Shalimar, Wilderton Road, Branksome Park

M

1908	Mackay, Miss	8 King's Park Road
1929	Mackay, Miss C. J.	,, ,,
1933	Maclean, Miss C.	16a Walpole Road, Boscombe
1933	Maclean, Miss L.	,, ,, ,,
1909	McBean, Miss S.	29 Parkwood Road
1932	McDougall, M., M.B., B.S.	8 Dunkeld Road
1932	McDougall, Mrs.	,, ,,
1935	McMichael, E.	1 Branksome Wood Mansions, Branksome Wood Road
1935	McMichael, Miss E.	,, ,, ,,
1920	Male, H. C., M.D., M.R.C.S.	35 Irving Road, West Southbourne
1930†	*Malmesbury, The Rt. Hon. the Earl of, D.L., J.P.	Heron Court, Christchurch
1931	Marsh, W. H., B.SC.	Archways, Mount Pleasant, Ringwood
1936	Marsh, Miss M. F., B.SC.	,, ,, ,,
1913	Martin, Miss F. G.	8 Castlemain Avenue
1934	Martin, Miss H. F.	36 Portarlington Road
1935	Martin, W. P., M.A.	9 Verona Avenue, Southbourne
1921	Mate, Mrs. S. J.	10 Landseer Road
1930	Medwin, Miss G. L., M.B.E.	17 Ophir Road
1929	Meyrick, Sir George, BART.	Hinton Admiral, Christchurch

1930	Middle, Miss A. M	Tregenna, Castle Lane
1931	Miles, Miss V.	21 King's Park Road
1930	Miller, Dr. A. H.	Branksea Tower, Osborne Road, Parkstone
1926	Miller, Miss W. F., B.A.	Sunnycroft, 15 Penrith Road, Boscombe
1935	Miller, G. Victor, M.D.	Heathlands Hotel, Grove Road
1934	Mitchell, Miss E. A.	109 Edgehill Road
1930	Molineux, A. W.	Wendover, Manor Road, New Milton
1922	Moore, Major T. C., I.M.S.	Verwood, Dorset
1931	Morrell, C. Conyers, M.D., (Brux), L.R.C.S., L.R.C.P. (Edin.), D.P.H., F.R.I.P.H., F.R.A.S.	Mudeford House, Christchurch
1931	Morrell, Mrs. I. C., M.R.I.P.H.	,, ,,
1935	Morrison, Mrs. R. P.	Craigdhu, Grove Road
1935	Morrison-Bell, Sir C. W. H., BART.	Balcombe Tower, Branksome Park
1935	Morrison-Bell, Lady	,, ,,
1935	Morrison-Bell, Miss D. F.	,, ,,
1935	Morrison-Bell, Miss V. F.	,, ,,
1908	Moss, Miss	The Grange, 52 Westby Road
1929	Mott, Lady	4 Dingle Road
1933	Mott, Miss Agnes	,, ,,
1933	Mott, Miss J. H.	,, ,,
1932	Mullins, Miss D. E. A.	Rosemaryne, 111 Edgehill Road
1936	Murdoch, Miss J. C.	3 Rotherfield Road
1935	Muspratt, C. K., B.A., F.R.G.S.	25 East Avenue
1935	Muspratt, Mrs.	,, ,,

N

1936	Nankivell, Mrs. M. R .	St. Columb Porth, Sandbanks
1931	Nichols, Mrs.	Fanling, 58 Stirling Road
1935	Norman, Mrs. Vincent	Ashwick, Poole Road, Branksome
1931	Notcutt, E. A.	24 Southwood Avenue

O

1929	Ogden, Miss E.	Southland, Corfe Castle
1910	LOke, A. W., B.A., LL.M., F.G.S., F.S.A.	32 Denmark Villas, Hove, Brighton
1922	Ousby-Trew, Miss	Overthorpe, Michelgrove Road, Boscombe
1929	Owen, H., B.A., M.B., M.R.C.S.	59 Manor Road
1929	Owen, Mrs.	,, ,,
1929	Owen, J. D.	Barnweill, 42 Strouden Avenue
1929	Owen, Miss E. D.	,, ,,
1929	Owen, Miss M. D.	,, ,,

P

1904	Painter, Mrs.	29 Talbot Road
1935	Parry, Rev. A. A.	59 Tuckton Road, Southbourne
1928	Parry, Miss A. K.	Tilneyhirne, St. John's Road, Boscombe
1934	Parsons, A. J.	Parva, Morrison Avenue, Westbourne
1926	Parton, Miss M. A.	197 Holdenhurst Road
1926	Paterson, Miss L., J.P.	Corfe Lodge, Parkstone
1926	Paterson, Miss M.	,, ,,
1926	Paterson, Miss N.	,, ,,

1924	Pattinson, Dr. T. W.	59 Wellington Road
1924	Pattinson, Mrs.	,, ,,
1916	Penrose, Mrs.	Woodbury, 9 Grove Road
1916	Penrose, Miss F.	,, ,,
1916	Penrose, Miss M., B.SC.	,, ,,
1936	Perfect, A. L.	17 Boscombe Cliff Road
1929	Phelps, Mrs. J. V.	Woodbury, East Avenue
1921	Phillips, Rev. C. A.	36 Dean Park Road
1921	Phillips, Miss C. E.	,, ,,
1935	Phillips, Mrs. H.	Innisfree, Frankland Crescent, Parkstone
1934	Pickup, E. A.	24 East Avenue
1935	Pinder, T.	Dunster, Howard Road
1933	Platten, G.	Rotherfield Kennels, New Milton
1933	Platten, Mrs. A.	Rotherfield Grays, New Milton
1927	APocock, Miss E.	67 Wentworth Avenue
1921	Pontifex, R. D.	Dalton House, 68 Christchurch Road
1920	Pontifex, Mrs.	,, ,, ,,
1926	Potter, Rev. Prof. M. C., M.A., D.SC., F.L.S.	Corley Croft, York Avenue, New Milton
1930	Potter, Miss R. M.	Etruria, York Road, Broadstone
1930†	*Prain, Lt.-Col. Sir David, C.M.G., C.I.E., F.R.S.	The Well Farm, Warlingham, Surrey

Q

1922	Quick, R., F.S.A. (Scot.), M.J.S.	Tregenna, Castle Lane
1924	Quick, Mrs.	,, ,,
1930	Quick, Miss L.	,, ,,

R

1927	Raine, A. D.	Milverton, Lymington
1927	Raine, Mrs.	,, ,,
1912	*Rankin, W. Munn, M.S.C. (Leeds) B.SC. (Lond.) Hon. Member 1920	Municipal College, Burnley, Lancs.
1917	Ranshaw, Miss E. M.	9 Marlborough Road
1918	Ratcliffe, Mrs.	Brooklands, 32 Branksome Wood Road
1933	Rawlingson, Mrs. W. J.	Tankerville, 7 Owls Road, Boscombe
1936	Ray, W. T.	24 Alyth Road
1919	Rayner, Miss F.	35 East Avenue
1905	*Rayner, J. F., F.R.H.S., M.B. MYC. S.	3 Cumberland Park, London W.3
1934	Redmayne, W. T.	Lynford House, Burley, Ringwood
1927	Rees, Commandant S. J., F.R.G.S., J.P.	The Hawthorns, West Cliff Road
1935	Reid, A. H. G.	29 Newstead Road, Southbourne
1932	Reid, Mrs. F. E. A.	,, ,,
1924	*Reid, Mrs. E. M., B.SC., F.L.S.	Pinewood, Milford-on-Sea
1919	ARichards, Miss E. E., B.SC.	3 Clive, 20 Grove Road.
1928	Richards, Mrs. E. M.	253 Charminster Road
1932	Richardson, F. W., F.I.C., F.C.S.	30 Queen's Park Avenue
1932	Richardson Mrs.	,, ,,
1931	Richardson, Miss I. M.	87 Cranleigh Road
1936	Ringrose, B. J.	Farley, Harbridge, Ringwood
1936	Ringrose, Mrs.	,, ,,
1926	Rix, Miss M. E. de B.	Wayside, Stourcliffe Avenue
1916	Roberts, H. Astley, B.A.	Shalvah, Wilfred Road, Boscombe
1918	Roberts, Mrs.	,, ,, ,,

1924	Robertson, W. G. A., M.D., D.SC., F.R.C.P., F.R.S. (Edin.), F.S.A. (Scot.)	St. Margaret's, St. Valerie Road
1934	Robertson, Mrs. M. K. A., M.D., L.R.C.P., F.R.S.G.S.	,, ,,
1936	Robinson, Capt. F. Kildale	Frickley, Branksome Dene Road
1929	Robinson, Miss M. H.	Byways, Chaddesley Glen, Canford Cliffs
1929	Robinson, Miss W. A.	,, ,, ,,
1923	Roden, Miss E. M.	12 Walpole Road, Boscombe
1933	aRooke, Kenneth B.	18 Wharncliffe Road
1936	Rooth, Mrs. A. V.	Holt Mount, Wimborne
1933	Ross, Mrs. H. G.	Dingwall, Priory View Road, Moordown
1916	Rothwell, Mrs.	c.9 Pine Grange, Bath Road
1935	Rowling, Rev. Canon F.	87 Watcombe Road, Southbourne
1935	Rush, Major J. S.	Somerset House, Bath Road
1935	Rush, Miss C. J.	,, ,, ,,

S

1935	Sandison, Dr. J. F. W.	115 Talbot Road
1929	Saunders, Mrs. M. S.	Southernhay, Cambridge Road
1903*	oScott, J. H., M.E., M.I.M.C.E. Hon. Member 1936	Kirkby, 22 Linwood Road
1934	Screeton, Mrs. A.	57 Priory View Road, Moordown
1931	Scudamore, C. E., B.A., L.R.C.P.	18 Clifton Road, Parkstone
1914	Sharp, C.	Langdon, Parkstone
1919	Sharp, Miss E.	,, ,,
1935	aSharpe, Mrs. D. E.	Laputa Cottage, Lilliput Road, Parkstone
1933	aSheffield, Miss I. E.	177 Richmond Park Road
1927	Sherrard, Miss L. F.	31 Bryanstone Road
1932	Silvester, N. L., M.SC., F.A.MET.S.	East Cliff Hall
1920	Simpson, N. Douglas, M.A., F.L.S., F.R.M.S.	Maesbury, 3 Cavendish Road
1933	Slack, R. W.	40 Strouden Avenue
1934	Slicker, H. K.	133 Seafield Road
1914	Smyth, W. Johnson, M.D.	Killalief, 534 Holdenhurst Road
1922	Smyth, Miss M.	,, ,,
1915	Smythe, Mrs.	Willstead, 22 Cavendish Road
1920	Smythe, Miss D.	,, ,,
1916	Smythe, Miss K. M.	,, ,,
1935	Smythe, V. du B.	2 Irving Road, West Southbourne
1936	Smythe, Mrs. V. du B.	,, ,,
1936	Smythe, Miss C. du B.	,, ,,
1936	Smythe, A. du B., J.P., F.R.G.S.	,, ,,
1922	Speakman, Mrs. E.	13 Milton Road
1932	Spence, W. G.	The Shieling, Highlands Road, Barton-on-Sea
1932	Spence, Miss J. G.	,, ,,
1931	Spencer, C. T., F.R.A.S.	21 Alum Chine Road
1909	Spencer, J. F.	Glenthorne, 73 Richmond Park Road
1935	Spring, F. G., N.D.A., U.D.A.	Abovne, Spur Hill Avenue, Parkstone
1923	Stables, A. D.	Saxthorpe, St. Osmund's Road, Parkstone
1923	Stables, Mrs.	,, ,, ,, ,,
1923	Starr, Col. W. H., C.B., C.M.G., C.B.E.	4 Foxholes Road Southbourne
1936	Stevens, A. G.	Barford Lodge, 40 Seaward Avenue
1916	Stiff, S. J., B.SC.	Norden House, Corfe Castle
1916	Stiff, Mrs.	,, ,,
1916	Stiff, Miss M. J.	,, ,,
1933	Stockdale, Miss K. H.	72 St. Alban's Avenue
1924	Story, F. N.	Storyland, Church Road, Southbourne
1936	Strong, Mrs. B.	24 Langdon Road, Parkstone

1932	Sturt, C. E.	Sherwood, Grasmere Road
1918	G†*Sumner, Heywood, F.S.A.	Cuckoo Hill, South Gorley, Fordingbridge
1928	Sutherland, W.	Silverdale, 20 Penn Hill Avenue, Parkstone
1928	Sutherland, Mrs.	,, ,, ,,
1922	ASymes, H., M.A.	52 Lowther Road

T

1911	Tatchell, Leonard F.E.S.	Swanage
1928	Taylor, Mrs. R. A.	Flat 32, Hampshire Court, Bourne Avenue
1936	Thomarson, J., M.D.	Hinton Firs, East Cliff
1925	AThomasson, Miss M. E.	37 Belvedere Road
1936	Thompson, Miss E.	Holmwood, 30 Bournemouth Road, Parkstone
1928	Thompson, Rev. J. C., F.G.S.	Cragside, Manor Road, New Milton
1929	Thomson, A. G. A., M.A., M.B.	38 Wentworth Avenue, Boscombe
1932	Thomson, Mrs.	
1936	Trayfoot, H. G., M.B.E.	25 Eaton Road, Branksome Park
1936	Trayfoot, Mrs. L. W.	,, ,,
1935	Tregoning, E. A., M.A.	Saugeen School, Woodleaze, Wimborne
1933	Tucker, C. E.	St. Raphael, 11 Warren Edge Road, Southbourne
1929	Tucker, Mrs. E. M.	39 Hamilton Road
1934	Tuke, Major G. H.	Clare Lodge, Foxholes Road
1914	Twemlow, Miss E. E.	Devon Lodge, 83 Alumhurst Road

V

1918	Vorse, John	Leighurst, Walkford, Christchurch

W

1924	Wadlow, H. J.	The Gables, Queen's Grove, Parkstone
1921	Wales, Miss	The Nook, 4 Ormonde Road, Branksome Park
1921	Wales, Miss N.	,, ,, ,,
1913	Wallace, W. G.	61 East Avenue
1931	Wallace, Mrs. F. E.	Branksome Wood Mansions, Branksome Wood Road
1936	Waltham, T. Ernest, F.R.H.S.	60 Grosvenor Gardens, Boscombe
1920	LWanstall, W. S.	Del Monte, 6 Roslin Road
1920	LWanstall, Mrs.	,, ,,
1936	Warburton, J. F .	7 Forest Road, Bournemouth West
1936	Ward, J. A., M.D.	1 Howard Road
1933	Ward, L.	36 Bridge Street, Christchurch
1935	Ward, Rev. W. L. O.	24 Longfleet Road, Poole
1936	Ward, Mrs.	,, ,,
1936	Warlow, Frank, L.D.S.	99 Southbourne Road
1932	Watkins, H. G.	Leyland House, Osborne Road, New Milton
1930	Webb, Mrs. F. J.	Melbury, 18 Soberton Road
1935	Webb, Mrs. J. A.	52 Christchurch Road
1936	Weekes, Mrs. M.	3 Rotherfield Road
1932	Welch, Prof. J. J.	11 Beechwood Avenue, Boscombe

1928	Welfitt-Nicholls, Miss C	Campions, Sandy Lane, Riverhead, Sevenoaks
1913	Wetherell, Miss M.	Triana, 31 Harvey Road, Boscombe
1920	Wetherell, Miss S.	,, ,,
1918	Whitaker, S.	22 Somerset Road, Boscombe
1924	Whitaker, Miss E. M.	,, ,, ,,
1924	Whitaker, S. E., P.A.S.I.	22 Selwood Road, Addiscombe, Croydon
1920	White, J. R., M.A.	Whitecot, 15 Linwood Road
1931	AWhite, S. J.	7 Gilbert Road
1929	Whiteley, F. W.	7 Charminster Road
1919	Williams, John	Brynmill, 68 Southcote Road
1934	AWilliamson, A., B.SC.	47 Victoria Avenue, Winton
1935	Wilson, T. Shaw, A.R.C.A.	Little Drive, Nelson Road
1935	Wilson, Mrs. Shaw	,, ,,
1929	Windsor, Mrs. E.	Cragside, Manor Road, New Milton
1935	AWood, Miss E. B., B.SC.	4 New Park Road, West Southbourne
1920	Woodhouse, Rev. A. P.	Deanhurst, 5 Littledown Road
1903	oWoodhouse, W. J., A.C.P., M.I.H.	29 Twynham Road, Southbourne
1918	Woodhouse, Mrs.	,, ,, ,,
1923	Woodhouse, W. R.	,, ,, ,,
1923	Woodhouse, Miss M. M.	,, ,, ,,
1931	Woods, J. C.	Pine Croft, Rothesay Road
1931	Woods, Mrs.	,, ,,
1930	†*Woodward, Sir A. Smith, F.R.S., F.L.S., F.G.S.	Hill Place, Haywards Heath, Sussex
1932	Wren, G. G.	264 Charminster Road

Y

1935	Young, Rev. A. W.	542 Holdenhurst Road
1929	Young, Miss E.	11 Borthwick Road, Boscombe

To the Honorary Secretary,

Bournemouth Natural Science Society,

39, CHRISTCHURCH ROAD, BOURNEMOUTH.

Dear Sir,

I beg to propose that

M.....

(Please give Christian name in full, and state title—Mr., Mrs., Miss, etc., and any degrees or qualifications.)

Address..... ....

.....

**who is personally known to me*
**who has produced satisfactory credentials to me* *be elected an* **Ordinary* **Associate*
Member of the Society.

Date..... *Member's Signature*.....

I beg to second the above proposal

Date..... *Member's Signature*.....

***Delete words not applicable.**

Annual Meeting, 1936.

THE thirty-third Annual Meeting was held on Saturday, October 31st, at 3 p.m. Mr. Henry Bury, Chairman of Council, was in the Chair. The Minutes of the last Annual Meeting were read by the Hon. Secretary, Mr. W. J. Woodhouse. They were approved, and signed by the Chairman. The Council's Report was taken as read, and this, and the Hon. Treasurer's Statement of Accounts, was adopted on the proposal of Major Henderson, seconded by Mr. Gandy. Rev. F. C. R. Jourdain moved the vote of thanks to the retiring President, Mr. Henry Bury, in a short speech, which was seconded by Mr. J. R. White. The Chairman then announced the election by the Council of Sir Harold Carpenter as President for the ensuing year. The election of Officers was proposed by Mr. Hayes Barratt, seconded by Mr. Lowther, and together with the election of Chairmen of Sections, proposed by Mr. Vorse, and seconded by Mrs. Rothwell, was carried without dissent. The Hon. Auditors were re-elected on the proposal of Mr. Beeching Hall, seconded by Miss Twemlow.

The following five members were elected to the Council by ballot:—Mr. St. J. Burton, Miss Fryer, Mr. Lowther, Dr. W. G. A. Robertson and Mr. Wadlow.

In conclusion, Dr. Cameron proposed a very hearty vote of thanks to the Chairman. This was seconded by Dr. Robertson, and carried with applause.

Council's Report, 1936.

THE 33rd Annual Report shows a Membership of 497, including 15 Honorary Members, 10 Past Presidents, 5 Life Members, 22 Associates and 6 Original Members.

During the year October 26th, 1935-October 31st, 1936, there have been held:—

The Annual Meeting
The Presidential Address
23 General Meetings
69 Sectional Meetings
47 Sectional Excursions

as recorded in the following list:—

General.

Lectures and Meetings.

(* Illustrated by Lantern Slides.)

1935.

Oct.	26.	Annual Meeting.
Oct.	28.	Club Day.
Nov.	9.	Presidential Address. Henry Bury.
Nov.	18.	Club Day.
*Nov.	21.	Salisbury Cathedral. S. Whitaker.
Dec.	10.	Talk on Anomalies of Natural Phenomena. C. E. Tucker.
*Dec.	14.	Everyday Life in Ancient Greece. Mrs. E. Elgar.
Dec.	18.	Club Day.

1936.

*Jan.	11.	South Haven Peninsula. Capt. C. Diver.
Jan.	15.	Club Day.
Feb.	5.	Glimpses into the Sub-Conscious. Miss D. M. Lowther.
Feb.	12.	Club Day.
Mar.	9.	Club Day.
*Mar.	23.	Windsor Castle. R. Quick.
*Mar.	28.	The Universality of Beauty. W. G. Aitchison Robertson.
Apr.	22.	Club Day.
May	7.	Club Day.
June	22.	Club Day.
July	20.	Club Day.
Aug.	10.	Club Day.
Sept.	21.	Club Day.
*Oct.	10.	Demonstration of Cine-Camera. Miss H. Martin.
*Oct.	13.	The Ductless Glands. W. G. A. Robertson.
*Oct.	17.	The Mythical Atlantis. Henry Bury.
Oct.	19.	Club Day.

Sectional.

Archæological and Historical Section.

Lectures and Meetings.

1935.
*Dec. 5. A Mediterranean Cruise. J. Cameron.

1936.
*Jan. 7. Giants in History, Literature, Art and Medicine. W. G. A. Robertson.
*Jan. 25. Wells Cathedral. S. Whitaker.
*Feb. 15. Recent Prehistoric Finds in the Bournemouth District. J. B. Calkin.
*Feb. 25. The Kelts in Dorset. F. L. Lowther.
*Apr 4. The Iron Age in Dorset. F. L. Lowther.
*Apr. 18. Excavations at Maiden Castle during 1935. Lt.-Col C. D. Drew.

Excursions and their Leaders.

May 12. Tomson Church and Charborough Park. J. Cameron.
May 29 Pitt-Rivers Museum. J. Cameron.
June 30. Portchester Castle and Titchfield Abbey. J. Cameron
July 29. Eggardon Hill, Bere Regis and Puddletown. J. Cameron.
Aug. 26. Paultons. J. Cameron.
Sept. 10. Maiden Castle. J. Cameron.

Astronomical Section.

Lectures and Meetings.

1935.
*Nov. 16. The Sun. W. Goodacre.

1936.
*Jan. 18. The Possibility of Travelling to the Moon and Planets. C. Conyers Morrell.
*Feb. 11. A Talk on Nebulae and New Stars. J. Thornton Burge.
*Feb. 29. The Cosmic Rays. A. G. Byard.

Botanical Section.

Lectures and Meetings.

1935.
*Nov. 28. Botanizing in Dalmatia. N. Douglas Simpson.

1936.
*Feb. 8. In Pursuit of Alpines. E. D. Doncaster.

Excursions and their Leaders.

Apr. 27. Brockenhurst. J. Vorse.
May 5. Cowgrove and Pamphill. R. K. Cardew.
May 14. Wareham. L. B. Hall.
May 22. Verwood. Major Moore.
May 26. Bloxworth. F. L. Lowther.
June 4. Marlborough Deep. J. Vorse.
June 8. Corfe. H. J. Wadlow.
June 15. Holmsley. L. Beeching Hall.
June 25. Rockbourne. Miss M. Penrose.
July 2. Burley. H. J. Wadlow.
July 7. Winterbourne Zelstone. F. L. Lowther.
July 13. Beaulieu Road. H. J. Wadlow.

July 21. Studland Heath. L. Beeching Hall.
July 27. Brockenhurst. J. Vorse.
Aug. 7. Morden Park and Decoy. F. L. Lowther.
Aug. 13. Chapman's Pool. L. Beeching Hall.
Aug. 18. Swanage. H. J. Wadlow.
Aug. 25. Corfe. H. J. Wadlow.
Sept. 1. Studland and Ballard Down. L. Beeching Hall.
Sept. 8. Moreton. R. K. Cardew.
Sept. 15. Ower. T. E. Belcher.
Sept. 24. Hurn. Miss C. H. Fryer.
Oct. 1. Creech Barrow. H. J. Wadlow.
Oct. 8. Fungus Foray. M. C. Potter and J. Vorse.
Oct. 15. Wareham. L. Beeching Hall.
Oct. 22. Bere Regis. F. L. Lowther.
Oct. 27. Fungus Foray. M. C. Potter and J. Vorse.

Entomological Section.

Lectures and Meetings.

1935.
Nov. 12. Informal Meeting.

1936.
Jan. 21. A Talk on Beauty in Butterflies. G. E. J. Crallan.
Feb. 27. A Talk on the Collection of Lepidoptera in the Society's Museum. G. E. J. Crallan.
Mar 17. Informal Meeting.
Apr. 21. Habitats of British Butterflies. Miss K. M. Chilver
Oct. 20. Informal Meeting.

Geographical Section.

Lectures and Meetings.

1935.
*Nov. 7. Grand Canyon of the Colorado. C. Lyon.

1936.
*Jan. 2. Children's "At Home." C. Lyon.
*Feb. 1. Edinburgh and its Gardens. J. Nimmo.
*Feb. 22. The Bavarian Tyrol. G. W. Bater.
*Mar. 14. Buda Pest. J. Cameron.
*Mar. 25. Rome. G. A. Parry.
*Apr. 15. Exploring Algeria. J. Cameron.
*Oct. 3. Some Modern Geographical Methods. W. J. Woodhouse.
*Oct. 24. Prague. J. Cameron.

Excursions and their Leaders.

June 16. Muchelney Abbey. J. Cameron.
July 10. Trent Manor and Sherborne Castle. J. Cameron.
Aug. 5. Alfred's Tower and Stourhead Gardens. J. Cameron.

Geological Section.

Lectures and Meetings.

1935.
*Nov. 14. The Problem of the Grand Canyon. A. G. Byard.
*Dec. 7. Alleged Changes on the Bournemouth Cliffs. H. Bury.

1936.
*Jan. 14. Geological Processes in Various Periods. A. Gibbons.
*Feb. 18. Elementary Geology. C. E. Scudamore.

*Mar. 19. Rocks and their Structure. A. Gibbons.
*Apr. 7. The Natural History of Coal. Rev. W. Looker.

Excursions and their Leaders.

May 19. Hengistbury Head. H. Bury.
June 18. Wareham and Studland. H. Bury.
July 8. Chickerell and Langton Herring. H. Bury.
Sept. 3. The New Forest Plateau. H .Bury.

Microscopical Section.

Lectures and Meetings.

1935.
Nov. 15, Dec. 20.

1936.
Jan. 17, Feb. 21, Mar. 20, Apr. 17, May 15, June 19, July 17, Aug. 21, Sept. 18, Oct. 16.

Objects of Interest.

Photographic Section.

Lectures and Meetings.

1936.
*Mar. 30. Snowdonia. S. Whitaker.
*Apr. 25. Wells Cathedral. S. Whitaker.
*Apr. 28. Exhibition of Members' Work.
*May 2. A Cruise to the Atlantic Isles. E. Dodshon.

Excursions and their Leaders.

June 10. Westbury and Lacock Abbey. S. Whitaker.
July 15. Barrington Court. S. Whitaker
Aug. 12. Binghams Melcombe. S. Whitaker.
Aug. 20. Longford Castle and Downton Moot.
J. R. White and S. Whitaker.

Physical Section.

Lectures and Meetings.

1935.
Nov. 30. Impressions of a General Analyst. F. W. Richardson.
*Dec. 11. Weather Forecasts. P. R. Raymond Zealley.

1936.
*Jan. 23. The Making of Thermometers. W. H. Marsh.
*Feb. 20. Clouds and Cloud Forms. Norman L. Silvester.
*Mar. 26. Silicon in Past Ages. A. G. Byard.

Zoological Section

(including Biological and Anatomical).

Lectures and Meetings.

1935.
Oct. 29. Informal Meeting
*Nov. 23. Egypt and Palestine. Rev. F. C. R. Jourdain.
Nov. 25. Biological Discussion.
*Dec. 3. Bird Life of S.W. Scotland. Rev. C. J. Pring.

Dec. 16. Biological Discussion.
Dec. 30. Structural Elements. B. Gorton.

1936.
Jan. 20. Biological Discussion.
Feb. 6. How We Keep Warm. B. Gorton.
Feb. 17. Biological Discussion.
Mar. 7. Man versus Horse. B. Gorton.
Mar. 16. Natural History Fallacies. L. Beeching Hall.
*Mar. 21. Life on an Arctic Island. Rev. F. C. R. Jourdain
Apr. 2. The Brain and All That. B. Gorton.
Apr. 20. Biological Discussion.

Excursions and their Leaders.

May 9. Abbotsbury Swannery. Rev. F. C. R. Jourdain.
Aug. 17. Whipsnade. Rev. F. C. R. Jourdain.
Sept. 15. Poole to Wareham. Rev. F. C. R. Jourdain.

It is with deep regret that the Council reports the deaths of the following members:—

Mr. Sidney J. Mate, Rev. W. Simpson, Mr. H. Backhouse, Mr. S. G. Floyd, Mr. W. Hoppen, Miss E. C. Parton, Mrs. J. P. Matthews, Mr. Claude Lyon, Mr. G. M. Sayle and Dr. Telford-Smith.

FORM OF LEGACY.

The following FORM OF BEQUEST is recommended for adoption by those who may be desirous of leaving by Will money for promoting the objects and work of the Society :—

I give absolutely to the Treasurer for the time being of the Bournemouth Natural Science Society of No. 39 Christchurch Road, Bournemouth, for the general purposes of the Society the sum of £ s. d. free of duty, and I declare that the receipt of the said Treasurer for the time being shall be sufficient discharge for the said legacy.

Summary of the Accounts for the Year ending 30th September, 1936.

RECEIPTS.

	£	s.	d.
Current A/c.			
Members' Subscriptions	394	17	6
Donations to General Fund	0	17	0
*Special Donation for Payment of Secretary ...	35	0	0
*Special Donations towards Cost of Volume of Proceedings	55	0	0
Sale of Proceedings of the Society ...	0	2	8
Rent from Tenants	70	0	0
Letting of Hall, etc.	38	11	0
Donations for Library	1	2	6
Surplus from Excursions	30	19	1
Pennies for use of Telephone	2	0	10
Sundry	1	8	8
	629	19	3
Balance from 1935	45	4	1
	£675	3	4

See important note overleaf.

PAYMENTS.

	£	s.	d.	£	s.	d.
Interest on Debentures	151	13	0			
Less Tax	35	1	4			
				116	11	8
Interest on Loans	6	10	0			
Less Tax	1	10	1			
				4	19	11
Income Tax under Schedule D ...				0	4	6
Corporation Duty				2	14	1
Maintenance of the Society's House :—						
Rates	76	9	0			
Property Tax	46	2	6			
Water, Light and Heat ...	69	5	9			
Wages	59	13	1			
Insurances	15	15	3			
Telephone Charge	8	17	4			
Furnishing and Upkeep ...	5	13	1			
				281	16	0
Secretarial Expenses :—						
Printing and Stationery ...	31	19	4			
Postage	19	11	7			
Other Expenses	15	0	0			
				66	10	11
Maintenance of Garden :—						
Wages	20	5	0			
				20	5	0
Special Expenses of Library ...				2	10	5
Subscription to other Societies ...				1	5	0
Cost of Vol. XXVII. of Proceedings of the Society				10	2	0
Sundries				2	11	4
				509	10	10
Balance carried forward ...				165	12	6
				£675	3	4

See important note overleaf.

Deposit A/c. Debenture Fund.

	£ s. d.		£ s. d.
Balance brought forward	37 17 6	Balance on Deposit	38 8 7
Interest to Dec. 31st, 1935	0 11 1	*See important note overleaf.*	
	£38 8 7		£38 8 7

Building Fund.

	£ s. d.		£ s. d.
Balance brought forward	48 19 10	Balance on Deposit	49 14 2
Interest to Dec. 31st, 1935	0 14 4	*See important note overleaf.*	
	£49 14 2		£49 14 2

Archæological Research Fund.

	£ s. d.		£ s. d.
Balance brought forward	13 5 9	Contribution towards work on Long Barrow ...	5 0 0
Interest to Dec. 31st, 1935	0 3 11	Balance on deposit	8 9 8
	£13 9 8		£13 9 8

Redemption Fund.

	£ s. d.		£ s. d.
Balance brought forward	25 6 10	Redemption of Loan	30 0 0
Proceeds of General Knowledge Paper arranged by the Misses Penrose	10 0 0	Balance on Deposit	5 14 3
Interest to Dec. 31st, 1935	0 7 5		
	£35 14 3		£35 14 3

G. BRUMELL,
Hon. Treasurer,
1st October 1936.

We have examined the above accounts with the books of the Society and the Vouchers for payments and certify the same to be correct.

(Signed) FREDERIC BROAD.
(Signed) JOHN C. WOODS.

Bournemouth, 6th October, 1936.

Financial Note.

The current account shows the substantial balance of £165 12s. 6d., but it must be remembered that this includes £90 kindly given for special purposes and not yet expended. Apart from that sum income amounted to £539 19s. 3d., and ordinary expenses to £509 10s. 10d.: if the usual volume of Proceedings had been issued the Society would again have incurred a loss on the year's working. Through the kindness of donors it will be possible to publish the volume this year, but it is important that ordinary income should be increased. Existing members are asked to do all in their power to introduce new ones and thus assure a larger income to the Society.

Use has been made of the Redemption Fund to repay a loan of £30.

Library Report.

A severe loss has been sustained by the death of Mr. Claude Lyon, who had served as Hon. Librarian for the past 15 years. His successor (Mr. Whitaker), who acted as his assistant for seven years, bears the highest testimony to the zeal and efficiency with which he carried out his work and to his unsparing efforts to develop the usefulness of the Library. In this respect he has been well supported by the regular contribution of various scientific publications as well as by gifts of books by many members. Special benefactions of more than 100 volumes from Mrs. Rothwell, and a similar number from the Executors of the late Miss Hawley, are the most notable recent evidences of development in the Library.

Report of the Geological Section.

There have been no important discoveries in our district during the last two years, but the following publications will be found interesting by local geologists:—

Arkell, W. J. "The Tectonics of the Purbeck and Ridgway Faults in Dorset." Geol. Mag. Vol. LXXIII (1936), pp. 97-118.

Ibid. "The Portland Beds of the Dorset Mainland." Proc. Geol. Assoc. Vol. XLVI (1935), pp. 301-347.

Bury, H. "Some Anomalous River-Features in the Isle of Purbeck." Proc. Geol. Assoc. Vol. XLVII (1936), pp.1-10.

Davis, G. M. "The Dorset Coast; A Geological Guide," 1935.

Green, J. F. N. "The Terraces of Southernmost England." Quart. Journ. Geol. Soc. XCII (1936), pp. 58-88.

Wooldridge, S. W., and Kirkaldy, J. F. "River Profiles and Denudation—Chronology in Southern England." Geol. Mag. Vol. LXXIII (1936), pp. 1-16.

Report of the Zoological Section.

Summary of Observations on Birds from October, 1935 to October, 1936.

By the Rev. F. C. R. Jourdain, M.A., M.B.O.U., F.Z.S., etc.

1935.

Hooded Crow, *Corvus c. cornix*. One at Hurn, Dec. 1, said to have been there some weeks (S).

Continental Jay, *Garrulus g. glandarius*. A remarkable immigration of these birds took place in October from the Continent. On Oct. 5 a huge flock of 250-300 birds was seen flying high near Swaythling by C. R. Stonor and J Berry, and one was shot and sent up to the British Museum for determination. Subsequently, Major M. Portal recorded smaller flocks from the Meon valley (Oct. 3), and near Stoneham in larger numbers on Oct. 4, while other reports were received from Andover, Swanmore and Petersfield (Brit. Birds XXIX, p. 174). Other correspondents also noted unusual numbers at Alton, Ringwood and in Wiltshire (t.c., p. 212). Examination of many specimens shot seems to show that these birds were not of Scandinavian origin, but probably reached us from France, where the birds are barely distinguishable from our own. See also Bull. B.O.C. LVI, p. 24 and Ool. Rec. XV, p. 73.

Starling, *Sturnus v. vulgaris*. Large roosts reported in reed-bed at Keyhaven from July 24 onward (S).

Crossbill, *Loxia c. curvirostra*. The birds which arrived in July, 1935, were still present in the autumn. Noted frequently in Southbourne (J); also in Boscombe, Oct. and Dec. (S), New Forest, Oct. (S).

Tree-Sparrow, *Passer m. montanus*. Flock of 30 with House-Sparrows near Moreton Station, Dorset, Oct. 13 (S).

Cirl-Bunting, *Emberiza c. cirlus*. Two near Fleet, Dorset, Apr. 19 (S and R); S. Hants coast, general (S).

Snow-Bunting, *Plectrophenax nivalis*. Remains on Chesil Beach, April (S and R).

Woodlark, *Lullula a. arborea*. Parkstone, Mar. 3; Bulbarrow Hill, Oct. (S).

Willow-Tit, *Parus a. kleinschmidti*. A pair found nesting at Littlesea, May 19 (D. Lack).

Dartford Warbler, *Sylvia u. dartfordiensis*. Considerable decrease, owing to heath fires, Studland (S). On Avon Beach, Mudeford, Oct. 23 (P); one Stanpit Marsh, Oct. 26 (B). See under 1936.

Black Redstart, *Phœnicurus o. gibraltariensis*. One, Avon Beach, Mudeford, Nov. 8; a hen same place, Nov. 15 (P).

Short-eared Owl, *Asio f. flammeus*. One Avon Beach, mobbed by gulls and small birds, Nov. 11 (P).

Hen-Harrier, *Circus c. cyaneus*. One (female or immature) Hurn, Dec. 1 (S).

Bittern, *Botaurus stellaris*. One seen in New Forest by Sir G. Thursby, Dec. 17 (BR).

White-fronted Goose, *Anser albifrons*. Two, Keyhaven, Dec. 15 (R and S).

Light-breasted Brent, *Branta b. hrota*. One, Christchurch Harbour, Nov. 14 (P).

Gadwall, *Anas strepera*. Four Christchurch Harbour, Nov. 3; all subsequently shot (P).

Wigeon, *Anas penelope*. Several hundred on pool near Beaulieu, wintering, Dec. (R and S).

Shoveler, *Spatula clypeata*. Fifty Beaulieu, Jan. 12; several there Mar. 21; also 25 Beaulieu, Sep. 12 (R and S).

Pochard, *Nyroca ferina*. Male at mouth of Beaulieu R., Dec. 22 (R and S); 62 (chiefly males) Littlesea, Dec. 24 (R).

Tufted Duck, *N. fuligula*. Six, Christchurch, Dec. 3 (P); noted Beaulieu, Oct. 27 (1); Nov. 24 (3) and Dec. 22 (10) by R and S.

Goldeneye, *Bucephala clangula*. Six, Christchurch Harbour, one adult, Oct. 26 (B).

Red-necked Grebe, *Podiceps griseigena*. One, Avon Beach, Nov. 15 (P).

Black-necked Grebe, *P. n. nigricollis*. One, near Beaulieu R., Dec. 15 (R and S); three, Poole Harbour, Dec. 29 (R).

Golden Plover, *Charadrius apricarius*. One Hengistbury, Oct. 6 (P); about 45, Keyhaven, Dec. 22 (R and S).

Grey Plover, *Squatarola squatarola*. A few on shores of Solent, late Oct, Nov. and Dec.; not more than ten in one day (R and S).

Turnstone, *Arenaria interpres*. A few wintering on coast, Beaulieu (S).

Green Sandpiper, *Tringa ochropus*. Two, Stanpit Marsh, Sept. 2 (B).

Greenshank, *T. nebularia*. One, Stanpit Marsh, June 11 (B) and another Oct. 7 (P); one near Beaulieu (wintering), Dec. 15 and 22 (R and S).

Grey Phalarope, *Phalaropus fulicarius*. In addition to previous records, one watched on water-cress bed on Sept. 17 (G. W. H. Moule) at Damerham; also two reported from Christchurch Harbour, Dec. 29 (P).

Bar-tailed Godwit, *Limosa l. lapponica*. Three, mouth of Beaulieu R., Oct. 27; no winter records (S).

Woodcock, *Scolopax rusticola*. One haunted a garden in Chessel Avenue, Boscombe, for some time early in Dec. (E. Brown).

Water-Rail, *Rallus a. aquaticus*. Must have been numerous in Spartina grass at Arne, Dec. 21, judging from chorus of squeals at sunset (R).

1936.

A depressing summer, with unusually heavy rainfall. The most interesting features of the year have been the continued presence of Crossbills in numbers since the invasion of 1935; the occurrence of Waxwings in the spring; the return of Montagu's Harriers to the New Forest; the visit of a flock of Avocets to Christchurch Harbour and the occurrence of the Iceland Redshank, which has not previously been recorded from Hampshire.

Raven, *Corvus c. corax*. Three seen on St. Catharine's Hill, mid-Jan. (P); one flying over the Square, Bournemouth, Jan. 27 (S); one over Southbourne, Mar. 6 (J); in Dorset, two or three nesting sites in trees are now known.

Chough, *Pyrrhocorax p. pyrrhocorax*. One said to have been seen on the Purbeck Cliffs in August, and the same observer reported two in the same locality in Aug., 1935. The observation requires confirmation, but in view of the spread of this species in other districts is worth investigation.

Hawfinch, *Coccothraustes c. coccothraustes*. One seen near Beaulieu, Jan. 12 (R and S); also a pair here Feb. 2 (S).

Crossbill, *Loxia c. curvirostra*. Although present in considerable numbers throughout the year in the Bournemouth district and evidently nesting, there have been many intervals when hardly a bird has been noticed for weeks at a time. In the New Forest breeding was definitely recorded in March and April, but many birds seem to have been non-breeders and were seen in considerable flocks in April.

Cirl-Bunting, *Emberiza cirlus*. Male singing, Avon Beach, Mar. 26 (P); also noted at Parkstone, Aug. (L. B. Hall).

Blue-headed Wagtail, *Motacilla f. flava*. A male watched at Mudeford, May 15 (P).

Grey Wagtail, *M. c. cinerea*. A nest near Sopley contained two well grown young, one dead bird and a young Robin ! (Miss P. Jellicoe).

White Wagtail, *M. a. alba*. Stanpit Marsh, 5 Apr.; nine or ten, Keyhaven, 5 Apr. (S).

Firecrest, *Regulus i. ignicapillus*. Three, one male and two females, Ballard Down, Mar. 22; and four there on 29 (R and S).

Waxwing, *Bombycilla garrulus*. One seen at Winkton, near Christchurch, 9 Feb. (J); Miss R. Chute also reports one seen on Apr. 7 near Basingstoke and again on the 12 and for a week afterwards, but only one subsequently, on the 23rd.

Pied Flycatcher, *Muscicapa hypoleuca*. A male at Mudeford, Apr. 19 (P).

Dartford Warbler, *Sylvia u. dartfordiensis*. A pair reported on Hengistbury late in February (J); and strong evidence of one pair breeding there later (P). A good year for this species owing to absence of heath fires.

Black Redstart, *Phoenicurus o. gibraltariensis*. One, Mudeford, Mar. 21 (P); three, Ballard Down, Mar. 29 (S).

Dipper, *Cinclus c. gularis*. Three seen, one with nesting material in bill, at Abbotsbury, May 9 (Misses E. Trotter and E. Whitaker).

Short-eared Owl, *Asio f. flammeus*. One flushed from Newtown Marshes, I. of Wight, Jan. 19 (S); one reported from Holton Heath, Jan. (S).

Peregrine, *Falco p. peregrinus*. Some of the Dorset breeding birds have been killed off by pigeon fanciers and the young have been taken from other eyries for falconry, so that there has been some diminution of the stock.

Hobby, *F. s. subbuteo*. This species is holding its own well. One nest found this year contained a clutch of 4 eggs, an unusually high number (J).

Buzzard, *Buteo b. buteo*. Two seen Bulbarrow, Feb. 9 (S).

Hen-Harrier, *Circus c. cyaneus*. An immature male or female seen Holton Heath, Jan 25 (S).

Montagu's Harrier, *Circus pygargus*. Two pairs were again present in the same district as last year and one reared a brood of 3 young (BR).

Heron, *Ardea c. cinerea*. A single nest is reported in a new locality about two mlies from the Sowley Pond Heronry, (Sir T. H. Troubridge).

Spoonbill, *Platalea leucorodia*. One at Beaulieu in April (S).

Bittern, *Botaurus stellaris*. One seen near Beaulieu, Jan. 12 (R and S).

Grey-lag Goose, *Anser anser*. One at close quarters near Beaulieu, Mar. 21 (R and S); 'Grey Geese' also seen flying over Brank-some on the same day (Mrs. J. E. Read).

Brent, *Branta bernicla* subsp.? Two in Poole Harbour, Feb 1 (S). Four or five same place, Feb. 8 (FP); sixteen at Keyhaven, Mar. 21 (R).

Teal, *Anas c. crecca.* Not numerous; a few Beaulieu, Jan 12 (R and S); two, Newtown, Jan 19 (S); five, Stanpit, Sept 18 (J and P).

Garganey, *A. querquedula.* A male, Wareham, Mar. 22 (S); female, Lodmoor, April 10 (S).

Wigeon, *Anas penelope.* Many, Beaulieu, Jan 12 (S); a male, Hengistbury, Mar. 29 (P).

Shoveler, *Spatula clypeata.* Fifty on backwater, Beaulieu, Jan. 12 (R and S); several there Mar. 21 (R) and 25 on Sept. 12 (R).

Pochard, *Nyroca ferina.* Thirty-eight, Littlesea, Jan. 11; still there on 13th (R and S).

Tufted Duck, *N. fuligula.* Five or six, Beaulieu, Jan. 12 (R and S).

Goldeneye, *Bucephala clangula.* Twelve (females and immature), Poole Harbour, Jan. 11 (R and S); female, Keyhaven, Jan. 12 (R and S); one Beaulieu, Jan. 26 (S); six Studland Bay, Feb. 4 (S).

Velvet Scoter, *Oidemia fusca.* One off Old Harry rocks, Mar. 22 (S).

Red-breasted Merganser, *Mergus serrator.* Sixty at sea in small parties outside Poole Harbour, Jan. 11 (R and S).

Cormorant, *Phalacrocorax c. carbo.* One with thigh patch off Avon Beach, Jan. 31 (P); a pure white-breasted bird, Poole Harbour, Sept. 5 (J).

Gannet, *Sula bassana.* Immature bird dead on Hengistbury (oiled), Jan. 12 (P).

Great Crested Grebe, *Podiceps c. cristatus.* In varying numbers; twelve off Branksome and 60 in Studland Bay, Jan. 11 (S); 30 in Bournemouth Bay, Feb. 16 (E. M. Nicholson); two pairs, Sowley Pond, Mar. 1 (S).

Slavonian Grebe, *P. auritus.* Six, still in winter plumage, Poole Harbour, Mar. 8 (S); five or six, Studland, Mar. 22 (S). A pair seen on three occasions, first half of Aug., Beaulieu (Sir T. Troubridge).

Black-necked Grebe, *P. n. nigricollis.* Twelve, Studland Bay and some Bournemouth Bay, Jan. 11 (S); nine, Poole Harbour, Feb. 1, and five, Studland, Mar. 22 (S).

Great Northern Diver, *Colymbus immer.* One Bournemouth Bay and two Poole Harbour, Jan. 11 and 13 (R and S); two Studland Bay, Feb. 1 (S).

Red-throated Diver, *C. stellatus.* One in Christchurch Harbour nearly all January (P); one Beaulieu R., Jan. 12 (R and S);

one Wareham R., March 22, and three, Studland Bay, Feb. 1 (S).

Oyster-Catcher, *Hœmatopus o. occidentalis.* Not often seen here in numbers; five, Newtown Marshes, Jan. 19 (S); ninety-six counted in Poole Harbour, besides dense crowds in the distance, Feb. 7, sixty to seventy seen there, Feb. 1 (S).

Golden Plover, *Charadrius apricarius.* One, Newtown Marshes, Jan. 19; three near Beaulieu, Jan 26 (S). A flock of 270 to 310 near Andover, Oct. 4 (W. Simpson); an early date for so large a flock.

Grey Plover, *Squatarola squatarola.* Twenty—thirty, South Haven Peninsula, Jan. 11; one, Newtown, Jan. 19; thirty—forty, Beaulieu, Jan. 26, and about the same number Studland Bay, Feb. 1; twenty-five, Studland, Mar. 8 (S); one, Keyhaven, Mar. 23, and one Hengistbury, Apr. 6; thirty—forty on Pennington Marshes, Sept. 22 (P).

Turnstone, *Arenaria interpres.* Six, Beaulieu, Jan. 12 and 26 (R and S). Two, Beaulieu, Feb. 2 (S). Two Stanpit Marsh, July 29 (J. and P).

Ruff, *Philomachus pugnax.* A male, Beaulieu, Jan. 26, and one, Lodmoor, Apr. 10 (S).

Sanderling, *Crocethia alba.* Avon Beach, March (P).

Knot, *Calidris canutus.* Two, Studland Bay, Feb. 1 (S); eight, Avon Beach, Sept. 22 (P).

Curlew-Sandpiper, *C. testacea.* One recorded, Sowley mud-flats, Jan. 18 (Miss P. G. Harding).

Purple Sandpiper, *C. m. maritima.* One on rocks at Sandbanks, Jan. 11 (R and S).

Green Sandpiper, *Tringa ochropus.* One, Lodmoor, Mar. 29; two there Apr. 18 (R).

Iceland Redshank, *T. totanus robusta.* A bird picked up dead at Beaulieu on Jan. 12 with wing 164 mm., bill 44.5, tarsus 48, has been identified by Mr. H. F. Witherby and myself as the Iceland race, not previously recorded from the county (Brit. Birds XXIX, p. 325) (R and S).

Dusky Redshank, *T. erythropus.* One at Beaulieu, Sept. 12 (S and R).

Greenshank, *T. nebularia.* One bird wintered at Beaulieu and was seen on Jan. 12, 21, 26, while two were present on Feb. 2 (R and S).; three in Newtown Marshes, Jan. 19 (S); also several at Beaulieu, Sept. 12 (R).

Avocet, *Recurvirostra avosetta.* A flock of twelve birds visited Christchurch Harbour, and were first noticed on Aug. 7 (Miss N. Shaw), again on the 8th (P) and 9th (P); still present on 10th (J) and 11 (P), but not seen afterwards (Brit. Birds XXX p. 196).

Bar-tailed Godwit, *Limosa l. lapponica.* One, South Haven Peninsula, Jan. 11; one Beaulieu, Jan 26; seventeen—eighteen, Poole Harbour, Feb. 1 (S); two Lodmoor, Apr. 18 (R and S); one, Christchurch Harbour, May 5 (P) and May 12 (J and P); also two, Poole Harbour, Oct. 3 (R).

Black-tailed Godwit, *L. l. limosa.* One, Beaulieu, Jan. 26 (S); one Swineham Point, Mar. 29 (R); and Lodmoor, Apr. 10 (S); also seven near Arne, June 29 (early date); one, Stanpit, July 28 (P); and two there Sept. 23 (P); at Beaulieu, one or more, Sept. 12 (R).

Sandwich Tern, *Sterna s. sandvicensis.* Noted at Poole Harbour, Apr. 4; Lodmoor, Apr. 10 (S).

Kittiwake, *Rissa t. tridactyla.* One off Chesil Beach in gale, Jan 8, and one (immature), Studland Bay, Jan. 11 (R and S).

Arctic Skua, *Stercorarius parasiticus.* One off Portland Bill, July 7, and a pair (light-breasted) chasing the gulls, Mudeford, Aug. 11 (P).

Water-Rail, *Rallus a. aquaticus.* One seen Beaulieu, Feb. 2 (S).

The following abbreviations are used :—B = S. D. Barfoot; P = Miss C. Popham; R = K. B. Rooke; S = K. D. Smith; BR = B. J. Ringrose; FP = Miss F. Penrose; J = F. C. R. Jourdain. Other contributors' names are given in full.

ARRIVAL OF MIGRANTS, HAMPSHIRE, 1936.

Tree-Pipit. Apr. 26, Farnborough (F).

Yellow Wagtail. April 9, Ibsley (BR); 10th, Christchurch (P); 11th, Iford (T).

Red-backed Shrike. May 3rd, Southwick (F); 6th, Sowley (F).

Spotted Flycatcher. May 2nd, Itchen Abbas (P).

Chiff-chaff. Mar. 20th, Mudeford (P); 21st, Harbridge (BR), Warren Beach and Odiham (F); 22nd, Yarmouth, I.W. (F); 24th, Bournemouth (FP).

Willow Warbler. Mar. 28th, Harbridge, several (BR); Apr. 1st, Hengistbury (F); 2nd, Mudeford (P); 5th, Sowley and Hengistbury (S), Southbourne (T).

Wood-Warbler. May 10th (P).

Reed-Warbler. ?Apr. 13th, Christchurch (P); May 5th, Southbourne (J).

Sedge-Warbler. Apr. 27th, many, R. Avon (T); Christchurch (P).

Garden-Warbler. Apr. 19th, Farnborough (F); 30th, Southbourne (J).

Blackcap. Apr. 5th, Sowley (S); Highcliffe (P); 9th, Bournemouth (FP); 16th, Wick, etc. (T).

Whitethroat. Apr. 9th, Mudeford (P); 19th, Highcliffe (S).

Lesser Whitethroat. Apr. 30th, Southbourne (J).

Wheatear. Mar. 22nd, Hengistbury (P); 29th Ibid (F); Apr. 4th, Ibid (T).

Whinchat. Apr. 11th Sowley (F); May 6th, Stanpit (P).

Redstart. Mar. 22nd, Yarmouth (F) [?]; Apr. 13th, Bournemouth (FP), also 17th and 18th; 25th, Farnborough (F).

Nightingale. Apr. 19th, Sowley and Highcliffe (S); Lymington and Farnborough (F), 24th; Romsey (F); 25th, Hartbridge (BR).

Swallow. Apr. 9th, Ibsley (BR); 11th, Sowley (F); 13th, Mudeford (P), Fareham (F); 14th, Tuckton (T).

House-Martin. Apr. 20th, Mudeford (P); 29th, Throop (T).

Sand-Martin. Mar. 7th, one, Winchester (F); 23rd—25th, Hengistbury (T); Apr. 4th, Yarmouth, I.W. (F); 5th, Sowley (S); 6th, Ibsley (BR); 9th, Avon Valley (P).

Swift. Apr. 26th, Mudeford, one (P); 29th, Romsey (F); May 1st, Christchurch (T); 3rd, Yarmouth (F); 4th, Bournemouth (FP).

Cuckoo. Apr. 14th, Southampton (F); 19th, Keyhaven (S), Sowley (F), Plumley (BR); 20th, Holdenhurst (T).

Turtle Dove. Apr. 19th and 27th, Harbridge (BR); 30th, New Milton (F); May 3rd, Swanmore (F).

Sandpiper. Apr. 5th, Beaulieu (S); 29th, Iford (T).

Lesser Tern. Apr. 19th, Christchurch (S); May 4th, Mudeford (P).

F = recorded in the "Field"; T = C. E. Tucker.

Entomological Note.

A Species of Ant new to Science.

During a preliminary survey of the ant fauna in the neighbourhood of Studland Heath, I had the good fortune to come upon a species of ant that did not appear to belong to any known British species. The specimens were seen by Dr. O. W. Richards who referred them to the continental genus *Strongylognathus*. A comparison with the continental material showed that the British form differed from the known continental species in several characters. A full description has been published by Mr. H. St. J. Donisthorpe who considers it to be a new species to which he has given the name *Strongylognathus diveri*.

The genus is an interesting one in that it is associated, either as a slave maker or inquiline, with *Tetramorium cæspitum*. The exact relationships between this new species and *Tetramorium* are not yet known as only workers have so far been discovered and an attempt to obtain a queen for study in an observation nest was unsuccessful.

C. DIVER.

Presidential Address, 1935.

Past and Present in the Earth's History.

By Henry Bury, M.A., F.G.S., Etc.

It is a little over a hundred years since the "Catastrophism" of the earlier geologists was overthrown by the inexorable logic of Lyell, who put forward in its place the "Doctrine of Uniformity." But a generation later this, too, was challenged by Huxley, who maintained that Evolution rather than Uniformity was the keynote of geological history. While, however, Lyell confined his attention to the visible rocks of the earth's crust, in which, as his predecessor Hutton had said, we see "no vestige of a beginning, no prospect of an end," Huxley insisted on starting from the far earlier period when the earth was a ball of liquid fire, just beginning to solidify.

It would be a waste of time to discuss how far this highly speculative early history should be regarded as Astronomical rather than Geological, but more than sixty years have elapsed since Huxley delivered his Address, and in that time we have altered our opinion on many subjects. It seems, therefore, worth while to ask whether, in the light of our most recent knowledge, we still see Uniformity where Lyell saw it—namely, in the record of the rocks—or whether we see a series of progressive changes to which the word Evolution may be more suitably applied. Or again, to put a rather different question, does the study of geological history, as revealed by the rocks, disclose the same processes of growth and decay in the inorganic as in the organic world? Do we, in other words, find anything in the earth's history at all comparable to the Seven Ages of Man, as depicted by Shakespeare? The infantile stages, if they ever existed, we may perhaps hand over to the Astronomers; while to the mathematical prophets like Sir James Jeans we may leave that

> " Last scene of all
> " That ends this strange eventful history."

But do we, in our geological studies, find evidence of an increase of power, corresponding to the change from the "whining schoolboy" to the Lover, and from the Lover to the Soldier? Or, on the other hand, do we trace a diminution of energy, suggesting the approach of the "lean and slippered pantaloon"?

It is with these questions that the present address is concerned, and it will be seen that any attempt to answer them introduces a number of very difficult problems. But the difficulty lies

in the solution of the problems, not in understanding their nature: and therefore it is hoped that, by avoiding technicalities as far as possible, I may be able to interest those who, while possessing no special training in geology, have nevertheless a general love of science, and are filled with that scientific curiosity which led R. L. Stevenson to write—

"O, I wad like to ken—to the beggar-wife says I—
The reason of the cause an' the wherefore o' the why,"

And we shall find that Nature echoes the same old answer—

"'It's gey an' easy spierin', says the beggar-wife to me."

× × × × × ×

Climate. Let us begin, then, with a very old theory which, though obsolete, introduces us to certain problems which we are still unable to solve.

A hundred years ago the oldest known sedimentary rocks were the Cambrian strata, which were regarded as the products of the primitive ocean, while below it was found a kind of granite, which was called "Fundamental Gneiss," and was supposed to be the earliest crust of the earth, before water condensed upon it.

It was argued that this crust would for a long time remain so hot as to cause copious evaporation, and the whole earth would be enveloped in such a dense mantle of cloud that the sun's rays could hardly penetrate it; and it was therefore suggested that during the Primary or Palæozoic period far more heat reached the surface from below than from above; that in the secondary period the two sources of heat about balanced one another; and that only in the Tertiary period did the sun acquire its present predominence.

In this way an explanation was offered of the presence of coal—that is, of course, of fossil plants—in Spitzbergen, well within the Arctic Circle. For if the earth provided, as it were, its own central heating, there would be but little difference in climate between the Equator and the Poles.

This theory, if true, would have afforded an excellent example of Evolution—the evolution of Climatic Zones—and have solved many difficulties; but unfortunately it is very far indeed from the truth. We know now that the pre-Cambrian rocks are of enormous thickness and represent a period of time about twice as long as all the rest of the strata put together. Moreover, some of the earliest of these ancient rocks are sedimentary, showing that the ocean was already in existence. And that is not all; for some of these early stratified rocks are thousands of feet thick; and since their lowest layers have not been melted away, it is evident that the crust of the earth had already acquired a great thickness, and was comparatively cool.

In fact, putting all the evidence together, it seems that even in these earliest times the rate of escape of heat at the surface was little if at all greater than it is at present; and since in that case the sun must already have been the only important source of heat for plants, the suggested explanation of coal inside the Arctic Circle falls to the ground.

How, then, are these plants to be accounted for? That is a profoundly difficult problem, and one that does not concern Spitzbergen alone. For in Greenland also fossil plants of various ages are found within less than 20 degrees of the Pole. If they were only of a herbaceous character they would present no difficulty, for herbaceous annuals grow freely on the coast of Greenland to-day. But in each case there are trees, which will not grow in such high latitudes now, for they have to contend not only with intense cold, but with six months' darkness as well. Many of these trees, too, have their nearest living relations in tropical regions; and although we must not attach too much importance to such affinities, yet we seem justified in saying that Greenland and Spitzbergen have been much warmer than now at several geological periods, including part of the Tertiary epoch. And the same is true of the Antarctic; for there, too, we find, at many different periods, fossil animals and plants which could not possibly exist there under present conditions.

These are remarkable facts, but let us also take into consideration the Great Ice Age which occurred in the Pleistocene, the most recent of our geological periods. Although it was not really one Ice Age, but a succession of cold periods with warmer intervals between, yet at one time an ice sheet extended down to latitude 50 deg. in Europe, and to lat. 40 deg. (the latitude of Madrid) in America; and it seems that even now the Northern Hemisphere has not quite recovered the temperature which it possessed before this Ice Age began.

What does all this evidence mean? Does it mean that the whole earth is growing progressively colder—with temporary fluctuations of temperature, but on the whole a decline? So far, perhaps, this conclusion might seem to be indicated; but we must now take into consideration the fact that there were other Ice Ages before the Pleistocene. The greatest of all was at the end of the Carboniferous period (the time of our coal-measures), while others of considerable intensity occurred in pre-Cambrian times. In the face of such evidence it is impossible to maintain that the earth has undergone progressive cooling at the surface: all we can say is that, at any one point, there seem to have been wide fluctuations of climate.

But before leaving this question of geological climates it is only fair to admit that there is much in them which we do not understand. For example, the great Permo-Carboniferous glaciation has left few traces in the northern hemisphere—some say none at all; while in the southern hemisphere we find ice-sheets reaching sea-level within a few degrees of the Equator.

There are many good authorities who declare that no such glaciers could have existed in India and Africa if those countries had always borne their present relation to the Equator; and similarly that trees could not have flourished in Greenland if that country had always been as near the North Pole as it is now. But physicists declare that the Poles and Equator must always have maintained the same relations to the great mass of the Earth; and so we are driven to consider whether the Continents themselves may not have shifted over the surface of the globe, as suggested by Taylor, Wegener and others.

It is too soon to pronounce a definite opinion on this startling but fascinating theory, though if movements have occurred on the scale postulated by Wegener, we ought to get proof before long. Meantime, while many geologists believe in such movements, others declare that no amount of juggling with Continents—no game of "General Post" among them—will account for all the facts. Physicists, too, have difficulty in imagining any force which is sufficient to produce the alleged movement. But this is a digression and we must return to our main subject.

Tidal Evolution. Sir George Darwin's well-known theory of Tidal Evolution supposed that the moon, originally part of the earth, had gradually receded from it, and that as the distance increased the force of the tides diminished; and another astronomer, Sir Robert Ball, suggested that tidal waves 600ft. high had continued throughout the Palæozoic period. These he thought would be an assistance to geologists in speeding up their formation of strata, and so enable them to keep their time-scale within the somewhat narrow limits prescribed by Lord Kelvin. But Sir George Darwin himself pointed out that none of our rock-formations showed any signs of such cataclysmic action, and he himself did not suppose that the tides had ever been more than twice as high as now within the geological period. It is small wonder, therefore, that we can find no confirmation of Tidal Evolution in the record of the rocks.

Mountain Building. The formation of mountain chains, in which the strata are crumpled and folded in a most complicated manner, must have required the exercise of enormous forces; and it is therefore worth while to inquire whether these forces have waxed or waned during the history of the earth. In every district we see a certain amount of bending and folding of the rocks, but in all the great mountain chains some of the strata are folded over on themselves so that their normal order is reversed. We may in fact, within certain limits, compare the building of a mountain chain with the action of a plough, for just as the plough turns its furrow-slices completely over, and turns all of them in the same direction, so the great folds of the earth's crust are reversed, and, in any one mountain chain, they are usually all

turned in the same direction. In the European ranges of the Pyrenees, Alps, Carpathians, etc., the folds are directed towards the north; while in the Himalayas, and in at least some of the other Asiatic chains, they are turned towards the south.

But there the analogy of the plough comes to an end, for instead of a series of parallel furrows we commonly get two or more folds piled up one on the top of the other. We find, too, that in most cases the upper folds have been pushed over the lower ones, the strata being crushed, and even polished, along this "thrust plane." Thus the Northern Highlands of Scotland can be shown to have moved along such a plane, in a north-westerly direction, for at least ten miles; while in the Alps, according to some very high authorities, such movements have extended to 50, and even perhaps 100 miles.

Surely, then, if there has been any marked increase or diminution of the earth's forces we ought to get some indication of it by comparing old mountain chains with new. But how are we to ascertain their relative ages?

It might be supposed that the condition of the hill-tops would afford a clue to this, just as we learn the age of a horse from the amount of wear that its teeth have undergone; but although it is true that the highest mountains in the world are among the newest, and that many of the older ranges are worn down to very low levels, yet the information to be obtained in this way is of too uncertain a character to be of any use. The only satisfactory method is to ascertain the age of the strata which have been folded into the different mountain ranges. For example, the great arch of strata which forms the Pennine Hills in the north of England, includes the Coal Measures; they are folded, whereas the Permian strata (the next above on our geological list) lie horizontally on the flanks of the hills. The age of the latter therefore is fixed within very narrow limits.

From such indications as these we learn that there have been comparatively few periods of mountain building, separated by long intervals during which the crust of the earth was in a state of comparative quiescence. The former are often spoken of as "Revolutions," but it must not be inferred from this that they were very sudden. Just as in the French Revolution long years of smouldering discontent preceded the great conflagration of 1789, so these geological revolutions gradually developed until they reached a climax, and then rather suddenly subsided: but even the climax was gradual and in no way resembled the "Cataclysms" which were so dear to the hearts of the early geologists.

In the immense period of time which has elapsed since the beginning of the Cambrian period there have been only three such Revolutions, while in the still longer pre-Cambrian one the number is variously estimated at from three to six; and in each one

of them many different parts of the earth were simultaneously affected.

It is extremely difficult to compare one Revolution with another, as many factors are still obscure, but Prof. Watts has recently expressed the opinion that the Alpine and Himalayan ranges (produced by the most recent of the Revolutions) are "as great, as lofty, and as complicated in structure as were any of their predecessors"; and taking the evidence as a whole, we cannot find any proof of a progressive change in the mountain-building forces. They have fluctuated greatly in intensity in a somewhat rhythmic manner, but they have remained essentially the same forces throughout.

Volcanoes. Anyone who has ever stood on the brink of a volcano during even a mild eruption must have brought away a very lively impression of the immensity of the forces concerned. And this impression will be enormously increased if we turn, in imagination, from the trifling eruptions which alone can be watched in this way, to such a frightful explosion as that of Krakatoa, which in 1883 reduced a cone 4,000ft. high to dust and ashes in a single night, and was heard 3,000 miles away. Unfortunately we do not know enough of the intensity and distribution of volcanoes in past periods to make any close comparison possible with those of the present day. All we can say is that volcanoes certainly increased in number and activity with each mountain-building period and tended to die down in the periods of tranquillity. But that is rhythmic fluctuation and not evolution.

Earthquakes. Of all the manifestations of ths earth's energy, none are more alarming than earthquakes; but we have no means of comparing past with present in this connection, though at first sight it might seem that some inference was possible. Earthquakes are usually connected with cracks in the earth's crust, comparable to the cracks in a wall with weak foundations. They are in fact commonly due to settlements in these cracks, which are known as "faults." In modern earthquakes the amount of vertical displacement is usually small—seldom reaching 50ft.; but many faults are known to geologists where the total movement runs into thousands of feet. For example, on either side of the Scottish Lowlands there have been movements of at least 10,000ft. One is tempted, therefore, to assume that some of the earthquakes in the past have been vastly in excess of modern ones. But there is no real evidence of this, and it is much more probable that these huge displacements were due to a number of small movements, continued perhaps over a million years or more. It is indeed likely that during the mountain-building periods earthquakes were more numerous and more intense than now; but even that is only a matter of inference.

Summary. In this hurried survey of the earth's history we have found little or no indication of any progressive changes

which ought to be called Evolutionary; while we have seen much to support the Doctrine of Uniformity. The fluctuations of the intensity of the forces are greater than either Hutton or Lyell contemplated, but they are essentially the same forces throughout. We set out also to search for some equivalent of the Seven Ages of Man; but in this we have certainly failed. If the Astronomers are right as to the earliest history of our planet, it is improbable that it ever passed through an infantile stage, or indeed through any stage in which its energy was less than at present. On the other hand we learn from the same authority that the period ahead of us, before the earth suffers seriously from loss either of its own energy or of the heat of the sun, is many times larger than that represented by the geological record. According to the latest estimates of geological time, based upon the rate of decay of uranium, the earliest rocks yet studied are seventeen hundred million years old: and yet it seems that even this almost inconceivably vast period may represent little more than a decade in the total life of Mother Earth.

Selected Papers.

A Local Survey of the Early Bronze Age.

By J. Bernard Calkin, M.A.

Introductory.

The object of this paper is to put on record all the known local "finds" which appear to be referable to the Early Bronze Age. During the rise and development of Bournemouth in the latter part of last century, in a region formerly clothed with heathland and woods, the frequent discovery of antiquities revealed the unexpected fact that this district had supported a considerable population in prehistoric times.

The first stone implement is said to have been found by Mr. A. H. Stevens[1], of Salisbury, in 1866, in local gravel, which had been spread on the roads, whilst the year 1873 is memorable for the discovery in the vicinity of a barrow on Redbreast Hill, Moordown[2] of 97 "ancient British cinerary urns." To-day not a scrap of pottery remains from what must have been one of the most extensive Late Bronze Age cemeteries in the country. These two early records indicated the nature of future discoveries, for of all the materials used by primitive man, stone and pottery are the least liable to decay under local soil conditions.

About 1891 Mr. G. H. Burt obtained the first specimens of the fine series of flint implements, which he eventually presented to the town. Other similar collections have since been made by Mr. Herbert Druitt, the late Mr. A. R. Mangin, Mr. J. H. Scott, Mr. H. R. Homewood and others. Unfortunately, little attempt was made to save prehistoric pottery, until Mr. Druitt turned his attention to this field about 1908. The condition of affairs as late as 1912 is shown in a statement made that year by Mr. G. Brownen at a public meeting, to the effect that though more than 60 large urns had been unearthed in the locality during the last few years, as far as he knew not one remained in the district.

The prominent part played by this area in the early history of Britain was now becoming more widely recognised, especially as the result of extensive excavations carried out in 1911-12 at Hengistbury by the Society of Antiquaries. Outside authorities also directed their attention to the Pokesdown urnfield and a barrow near Queen's Park in 1926-27, and to the Holdenhurst Long barrow early in 1936. Meanwhile Mr. Druitt in the area of Christchurch, and the writer in Bournemouth, had been steadily amassing a wealth of new material. Interpreted in the light of modern archæological research, this enables us to sketch in substantial outline the story of our early efforts to become civilised. Whether those efforts were justified is another matter!

[1] ASI. 635. [2] HFC. I 47, and II 14.

For the purpose of this paper, information has been gathered from all possible sources, and the writer hereby acknowledges his indebtedness to several curators and private collectors for their kind assistance. The objects examined have been classified and set out in Tables I and II, and wherever possible their sites of discovery plotted on the accompanying map. For more precise record purposes the site numbers given in Table I are now marked on the series of 6in. Ordnance sheets on file in the B.N.S. Society's library. Table II gives three types of arrowhead, though it is recognised that at any rate the barbed and tanged variety runs on into later times. The age of the "petit tranchet" derivatives is fully discussed by Dr. J. G. D. Clark, F.S.A., in A.J., Vol. XCI., Part I. The triangular arrowheads belong to the type figured in A.S.I. 2nd Ed. fig. 332. Two arrowheads with a long tang and only rudimentary barbs, and two with barbs but no tang (see A.S.I. fig. 328) are not included, but the Neolithic leaf-shaped variety has been added for comparison. A key to publication references, and a list of collections, are given in two appendices. The editor of the S.E.U.S.S. has kindly loaned the blocks for figs. 1, 2 and 4, whilst fig. 3 is reproduced by permission of the editor of the "Bournemouth Times and Directory."

The Environment.

The region shown on the map, which, by reference to the margin, can be divided into one mile squares, includes the joint estuary of the Stour and Avon. The high ground S.W. of the Stour consists of a dissected plateau covered with loamy gravel. From its highest point in the Corfe Hills, about 285ft. O.D. (square A4), it falls in a S.E. direction towards Southbourne (L2), where it stands at about 60ft. O.D. The edge of a similar spread of plateau-gravel is shown on the E. side of the Avon Valley (N7), and there is a stray outlier on St. Catherine's Hill (L5). The lower ground adjoining each river is almost entirely covered with "valley-gravel," but there is a narrow outcrop of Eocene sands and clays immediately below the scarp of the plateau, whilst each river meanders through a trough of alluvium usually about half a mile wide. The lower ground bordering on Poole Harbour is devoid of gravel, except at Hamworthy, as is most of the higher ground N. and N.W. of St. Catherine's Hill. These parts, in common with other regions possessing a clay subsoil, were probably forest-covered in prehistoric times. Such forests occupied a very large area of Britain and were a leading factor in controlling early migrations.

Now it can be shown by reference to a geological map that the largest spread of open country in Britain must have been the chalk district of N.W. Hants, S. Wilts, and N. Dorset, roughly comprised to-day by Salisbury Plain and Cranborne Chase, the very region to which the Avon and Stour give access.

Its light soil, the only kind that could be worked profitably by primitive methods of agriculture, is the chief factor which enabled it to become the most wealthy and populous part of our island during the Middle Bronze Age. The importance of our own region was not merely that it possessed well-drained open sites within easy reach of the river, but the fact that it provided traders and adventurers from overseas with a direct route to the markets and rich lands of the interior. The harbour at Hengistbury being by nature sheltered from the S.W. winds was a further point of advantage, so that it is not without justification that Hengistbury has been called the "port of Wessex."

Historical Setting.

The Early Bronze Age opened about 1900 B.C. with the arrival on these shores of immigrants familiar with the use of bronze. They were taller and more robustly built than the neolithic inhabitants, and they are best known to us from their practice of erecting round barrows over the graves of their dead, at whose side they often placed a vessel known as a beaker. Sometimes they added a bronze or flint dagger, archer's wrist-guard, or other personal belongings of the deceased.

Of the hundred or more round barrows in this district, the few that have been opened under competent supervision have contained burial urns and not beakers, and therefore belong to a later period. The Dudsbury barrow (G6), however, excavated in 1935, probably contained a primary burial of the Early Bronze Age, though without a beaker.

Excavation of the settlements of this period has revealed bones of ox, sheep, pig and dog, whilst the presence of querns or mealing stones shows that the people grew corn. Little is known about the form of their dwellings, but Dr. J. F. S. Stone's researches on Easton Down, Wilts[1], have exposed shallow oblong pits, which were provided with a timber, and perhaps a thatch, superstructure.

Two types of beaker enable us to distinguish two groups of invaders. Whilst the so-called "A" group predominates in Yorkshire and the Fens, and the "B" group in S.E. Britain, both are about equally represented in Hampshire and Dorset. The "B" group is supposed to be slightly the earlier, and of our local beakers, the beautiful specimen from site 57 follows the Breton tradition so closely that it may well be one of the earliest in the country. Fragments of domestic beakers of "A" type were recently obtained from the secondary silting of the ditch of the Holdenhurst long barrow. It may be noted in passing that with the latter were found several pieces of rusticated pottery covered with finger-print ornament. This has already been dignified by Dr. J. G. D. Clark[2] with the name of "Holdenhurst ware," whilst

[1] W.A.M. XLVI. 225. [2] P.S. II. 20.

BRITISH MUSEUM
NATURAL HISTORY

Fig. 1.—Beaker found in Boscombe Cemetery, 1921.

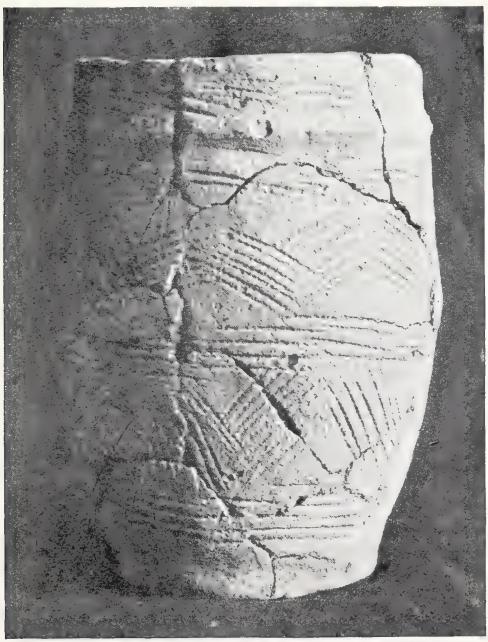
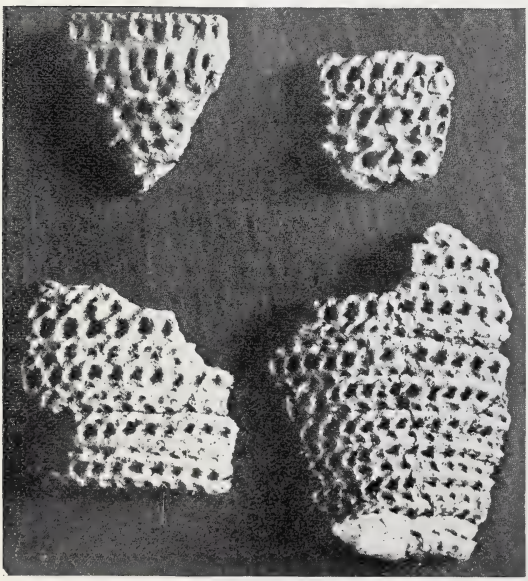


Fig. 2.—Beaker found in Horsham Avenue, Kinson, 1929.

FIG. 3.—Three Beakers found in Castle Lane, opposite Sheepwash, 1933.



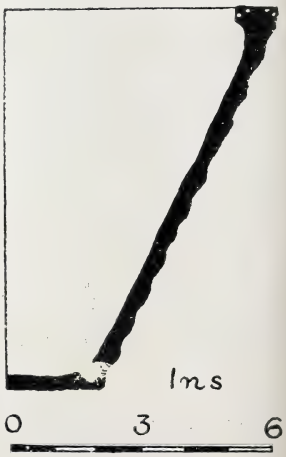


FIG. 4.—Urn of rusticated ware found in Nursery Road, Moordown, 1929

its association with beaker sherds enables us to assign to this period the remarkable urn from site 24 (fig. 4).

Both types of beaker are found on Salisbury Plain, and it is now practically certain that the people who used them saw the rise of Woodhenge and the colossal monument of Avebury[1]. Their influence lasted some three or four hundred years before native traditions reasserted themselves. It is to the latter part of this period, if not to a time actually after the opening of the Middle Bronze Age, that most of our remaining local beakers appear to belong, for they lack distinctive features, and suggest a fusion of the two beaker traditions. Of the three decadent examples found on site 46, one suggests an "A," the other two a "B" parentage (fig. 3). Barrow building seems to have been abandoned, whilst a condition of poverty or isolation is suggested by the complete absence of daggers and celts of bronze. Doubtless many of the local flint and stone celts belong to this period rather than to the Neolithic.

Interpretation of the Map.

With the exception of the finds in the long barrow, and the arrowheads from the site of the Pokesdown urnfield, probably every object marked on the map has been found accidentally, for the most part in gravel workings or during road construction. Fortunately a record of the site of discovery has generally been kept, so that finds can be plotted on the map with considerable precision. It is otherwise, unhappily, with the Richards Collection in which there are about a hundred arrowheads, probably of local origin, with no data as to where they were found. These have been omitted in their entirety.

Road-making and gravel working, whilst leaving some regions untouched, have been mainly concentrated on a rectangle extending from B to M, and from 1 to 4. Hence the absence of finds in the upper parts of the Stour and Avon valleys may be due to lack of excavation, whereas their absence in the neighbourhood of Poole and Parkstone justifies the conclusion that this region was unoccupied. Reason has already been given for supposing that it was under forest.

Barrows with beaker burials were generally erected on high ground and often some distance from the nearest settlement. However, the beakers shown on the map probably give a clue to the occupation sites, for it is natural to suppose that when interment in flat ground had become customary, the dead would be buried close to their dwellings. On this assumption, the settlements are seen to be situated for the most part either on the low gravel spreads, such as Furzy, Latch Farm[2] (LM 4), or on the

[1] P.S. II. 27.

[2] In this instance, as well as on sites 28, 29 and 93, the find-spots on the map have had to be spread out owing to their density.

plateau, where it could be approached by the easiest gradients, more notably at King's Park (J 3), and in Talbot Woods (G 3). Examination of the map suggests that beakers may turn up at Alderney (E 4).

There appear to be no examples of the southern "food-vessel," though it occurs as near as Langton Matravers, near Swanage, and at Nunwell, in the Isle of Wight.

The presence in the neighbourhood of Wick and Hengistbury of arrowheads without other contemporary objects may merely indicate the position of hunting grounds. It is unfortunate that lynchets and all other remains of ancient cultivation have long ago been denuded from the local loams and gravel, but the noteworthy absence of arrowheads at Kinson (G 5) suggests the possibility that the neighbouring fields were under the plough, or used for grazing. Extensive road construction at Kinson a few years ago, before the days of the mechanical excavator (which extracts and puts back the soil without its being sorted), gave ample opportunity for the discovery of arrowheads, if they were there.

The relative proportion of the three types of arrowhead seems fairly constant on the various sites, except for the marked predominance of the "petit tranchet" derivatives in the Talbot Woods. May this disparity have been due to unequal distribution of game?

The flint knife and arrowhead from Purewell (M 3) appear to be the only finds on the alluvium.

Comparison of total finds with those from neighbouring districts is not without significance. The number of beakers recorded from Wiltshire, ignoring small fragments, is about 80, from Dorset and Hampshire 21 each. Of these, no less than 13 come from our own area. To set against our 106 barbed and tanged arrowheads, the only figure available seems to be the 14 found in the Isle of Wight[1], an area over twice as large.

[1] I.W. II. 297.

Note.

By courtesy of Mr. Herbert Druitt, two unpublished beakers from Latch Farm and Southbourne are figured here for the first time, together with another found at Kinson last year. Mr. W. F. Grimes, F.S.A., has kindly provided the drawings for figs. 5 and 7, at short notice.

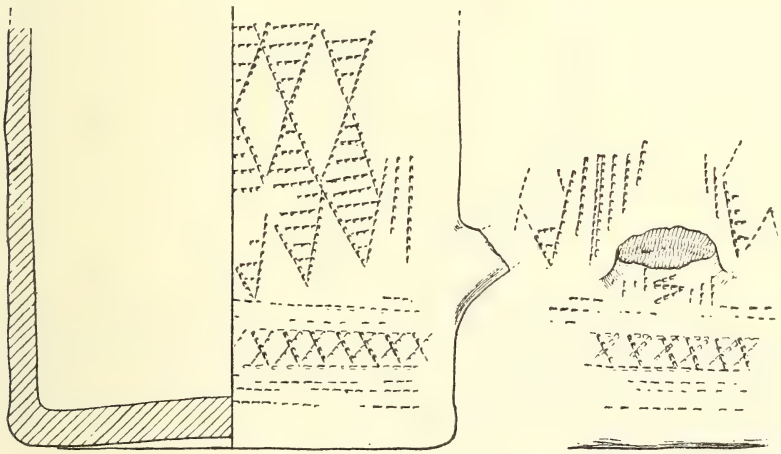


Fig. 5.—Handled beaker found at Furzy, Latch Farm, 1907-8. ½.

Fig 5. When found in the winter of 1907-8, this beaker is said to have been complete. The ware is pinkish-brown with a grey-black body, and has a backing of fine quartz grit. Mr. Grimes writes as follows:—

"This beaker, when complete, was probably a simple straight-sided mug. The main element in the decoration is a central band containing a double row of diamonds, which stops short at the handle. The band is enclosed below by a series of horizontal lines, poorly impressed, with a narrow band of lattice pattern between. This arrangement may well have been repeated around the top, but none of this part of the vessel remains. The back of the handle has a zig-zag or series of angular S units enclosed by side lines. The decoration is notched throughout.

There is no very close parallel amongst the comparatively small series of handled beakers recorded from this country. The vessel from Wynford Eagle, Dorset, figured by Abercromby (B.A.P. I.p. 96, No. 14) appears to be of the same type, though I have not seen the original. The cylindrical form would seem to relate both of these vessels to the handled mugs which occur on the East coast, and especially in the East Anglian-Lincolnshire district."

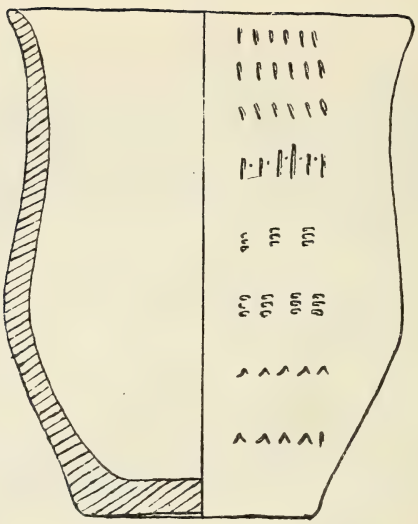


FIG. 6.—Beaker found at Cellars, Southbourne. ½

FIG. 6. Beaker found near the cliff opposite Cellars Farm, Southbourne. Colour, dark brown. Its form places it in the B group. The decoration is very uneven, and consists of simple types of ornament in horizontal bands. Those on the widest part have been made with a three-toothed instrument of unusual form, the rest by different methods of stabbing.

This style of ornament is generally supposed to indicate a late date, but Mr. Grimes points out that it is sometimes found associated with more highly decorated pottery and with "rusticated" ware, so that its crudeness may merely indicate its use for lowly domestic purposes.

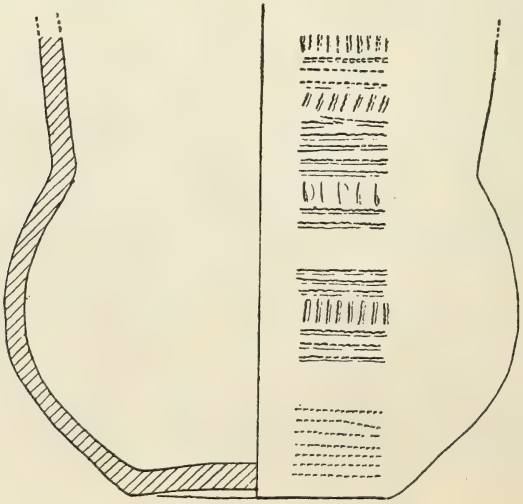


FIG 7.—Beaker found in Broadway, Kinson, 1935. ½

TABLE I.

Object.	Site.	Site No.	Square on map.	Date of Discovery.	Collection.	Publication (* = illustrated).	Remarks.
Beaker Type B	Furzy, Latch Farm	57	L M 4	2.7.1909	H D	B B 102*	Early example of Breton type.
„ Type A (frag.)	Holdenhurst long barrow	93	J 4	2.1936	J B C	P S III (1937)	Domestic pottery from ditch silting.
„ „ A „							
„ „ A „							
„ „ A „	Broadway, Kinson	79	G 5	7.1935	„		Fig. 7.
„ „ B	Near cliff, Cellars, Southbourne	202	L 2		H D		Fig. 6.
„ late handled (frag.)	Furzy, Latch Farm	57	L M 4	1907-8	„		Fig. 5.
„ „ collared	Horsham Avenue, Kinson	25	G 5	11.1929	J B C	S E U S S XL 21*	Fig. 2.
„ „ Type A?	Glenferness Avenue, Talbot Woods	28	G 3	5.10.1931	„	„ „ *	
„ „ „ A?				30.11.1931			
„ „ „ A				„			
„ „ „ A	Castle Lane opposite Sheepwash	46	K 3	29.9.1933	„	„ „ *	Fig. 3.
„ „ „ B				2.10.1933			Ornament of continuous spiral.
„ „ „ B				6.10.1933			
„ „ „ B	Boscombe Cemetery	29	J 3	1921	„	„ „ *	Fig. 1.
„ „ „ B (frag.)	„	„	„	„	F R		Similar to one above.
„ „ „ B	Little Canford	72	E 7		P R F		Without ornament.
Rusticated ware (frag)	Holdenhurst long barrow	93	J 4	2.1936	J B C	P S II 20*	With beaker in ditch silting.
„ „ Urn	Nursery Road, Moordown	24	H 4	1929	„	S E U S S XL 21*	Fig. 4.
„ „ (frag.)	Furzy, Latch Farm	57	L M 4	2.7.1910	H D	A J LXXXVIII 151[1]	Some fragments have grooved ornament.
Flint dagger	Bingham Road	94	H 3		J H S ii	N H B 5*	
Oval flint knife	Holdenhurst long barrow	93	J 4	2.1936	J B C	P S III (1937)	
„ „ „	Cameron Road, Purewell	100	M 3	23.1.1913	H D		
Plano-convex flint knife	Francis Avenue, Alderney		E 4	1932	J B C		
„ „ „	North Cemetery		H 4	1936	„		
„ „ „	Unemployed allotments, above Strouden Farm		H 4	„	„		
3 „ „ knives	Furzy, Latch Farm		L M 4		H D		
Discoidal polished flint knife	Namu Road, Winton	96	G 4		G H B	P S E A VI 51	Wrongly published as at Salisbury Museum.
„ „ „ „	Bournemouth				J B C		
Flake with ground edge	Glenferness Avenue, Talbot Woods		G 3	12.1931	„		
„ „ „ „	Bournemouth cliffs					A S I 291	
Macehead	Alderney Waterworks	95	E 4			C P no. 44[1]	
„	Mill Plain, Christchurch	16	L 3	1913	H D		Not found at Wimborne, as stated in R.C. records.
Perforated axe-hammer	42 Wimborne Road	92	G 3		R C		

[1]But erroneously described as Peterborough ware.

Fig. 7. Beaker found by the Bournemouth Gas and Water Company in Broadway, Kinson, during July, 1935. It was about 2ft. below the surface, but the discovery was not reported in time for the site to be examined. The ware is of the usual reddish-brown colour with a darker body, and it contains a fair amount of burnt flint grit. The vessel belongs to the A group. Its decoration is of a simple character, consisting of bands of different types of notched ornament, that on the shoulder incorporating a row of vertical finger-nail impressions.

TABLE II.
ARROWHEADS.

Area.	Square.	Collection.	Barbed and Tanged.	Petit tranchet derivatives.	Triangular.	*Leaf.*
Hengistbury, Wick, and Southbourne	KLMN 12	H D	15	3	1	*11*
		F R	9	6	2	*2*
		W G W		1		
		J B C		1		
			24	11	3	*13*
Boscombe, King's Park, and Pokesdown	JK 23	H D	14	4	4	*8*
		F R	4	2		*2*
		B N S S	2	2		*2*
		J B C	2			
		R C		1		
		M W	1			
			23	9	4	*12*
Talbot Woods and Winton	G 3	H D	4	2		*3*
		F R	2			
		J B C		10		
		J H S ii	1			*2*
		A R M		5		*2*
		F W R		1		
		E H C S	1			
		Lost		1		
			8	19		*7*
Sheepwash, Iford, Jumpers and Grove Farm	KL 34	H D	5	1		*2*
		F R		1	1	*1*
		J B C				*2*
		F W R	1			*1*
			6	2	1	*6*
Charminster, Strouden Farm and Holdenhurst	HJ 34	H D	2			*2*
		J B C	2	1	1	*1*
		D L	1			
		F W R	1		1	
			6	1	2	*3*

Area.	Square.	Collection.	Barbed and Tanged.	Petit tranchet derivatives.	Triangular.	*Leaf.*
Furzy, Latch Farm, and Mill Plain	LM 34	H D	13	9	1	*4*
Moordown, Redhill, and Ensbury Park	G 45	H D	2			*1*
		J B C	2	1		*1*
		G H B	4			
		F W R				*1*
			8	1		*3*
Alderney, West Howe, and Bankes Heath	E 4	F R	1			
		J B C		1		
			1	1		
Broadstone	B 5	D L	2			
		B S				*2*
		W G W	1			
			3			*2*
Various sites						
Purewell	M 3	H D	1			
Hurn	K 6	H D	1			
		F R	1			
Parley Court Farm	H 6	H D	1			
Wallisdown	F 4	W G W		1		
Upper Parkstone	E 3	H D	1			
East End, Corfe Mullen	A 6	G L				*1*
Sites too indefinite to plot on map.						
Bournemouth		F R	1			
Christchurch		F R	3			*1*
Parkstone		F R	1			
Bournemouth		G H B	4			*1*
			14	1		*3*
Totals			106	54	11	*53*
Percentage			62	32	6	
Percentage including leaf type ...			47	24	5	*24*

APPENDIX A.

REFERENCES TO PUBLICATIONS.

A J	Archæological Journal.
A S I	Ancient Stone Implements of G.B. 2nd ed. Sir John Evans.
B B	Book of Bournemouth, published for the B.M.A. 1934.
C P	Co-Partner. Magazine of the Bournemouth Gas and Water Co.
H F C	Proceedings of the Hampshire Field Club.
I W	Proceedings of Isle of Wight Natural History and Archæological Society.
N H B	Natural History of Bournemouth. B.N.S.S. 1914.
P S	Proceedings of the Prehistoric Society.
P S E A	Proceedings of the Prehistoric Society of East Anglia.
S E U S S	Proceedings of the S.E. Union of Scientific Societies.
W A M	Wiltshire Archæological and Natural History Magazine.

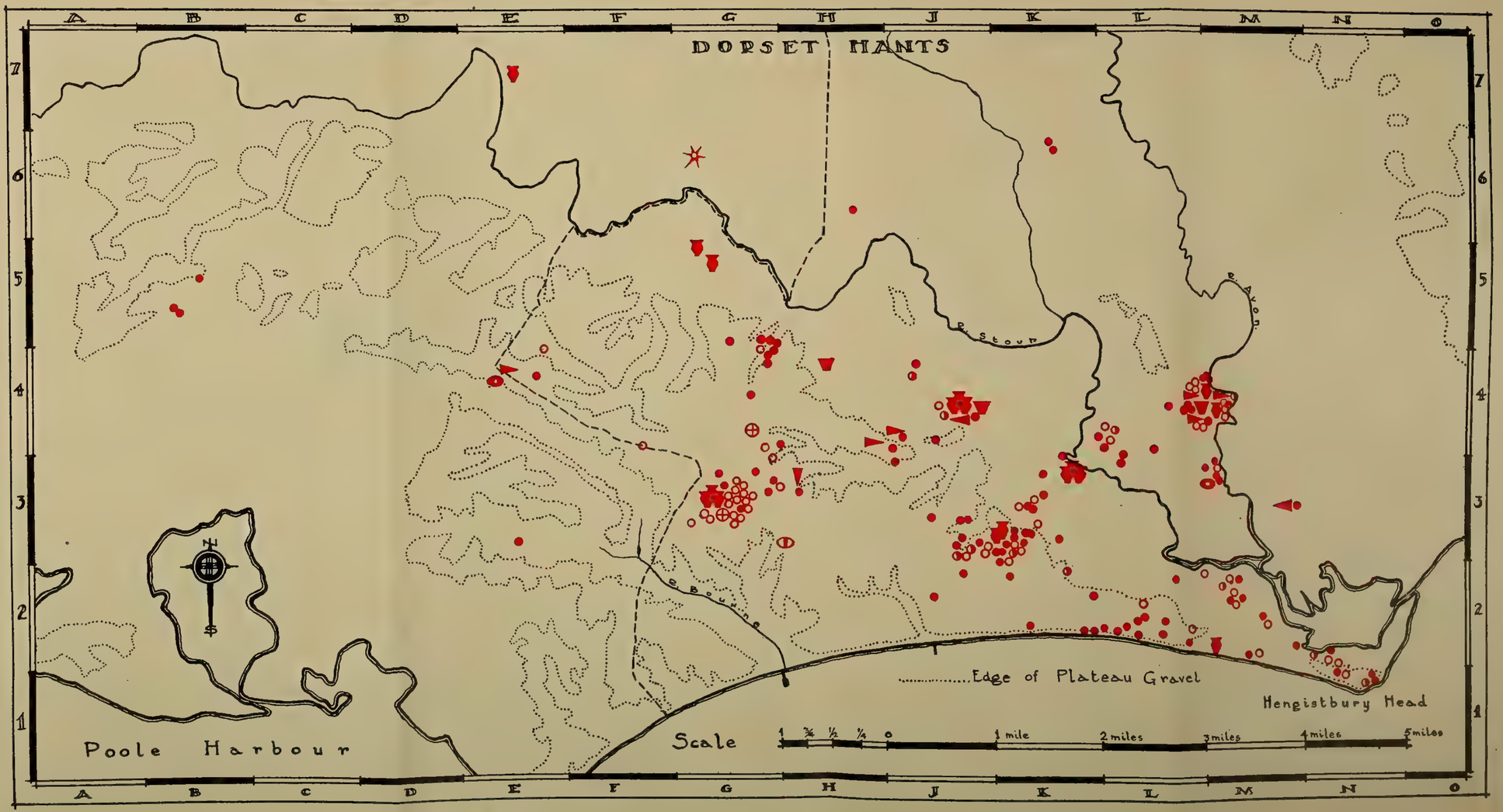
APPENDIX B.

COLLECTIONS.

A R M	A. R. Mangin, R.C.
B N S S	39 Christchurch Road.
B S	Miss B. Shaw, Fenners, Wimborne.
D L	D. Loader, 98 Strouden Road.
E H C S	East Howe Council Schools.
F R	F. Richards, Birmingham City Museum.
F W R	F. W. Robins, 4 Harewood Avenue, Pokesdown.
G H B	G. H. Burt. R.C.
H D	H. Druitt, Christchurch.
J B C	J. B. Calkin, Wychwood School.
J H S	J. H. Scott (i) R.C. (ii) B.N.S.S.
M W	Miss M. Wetherell, 21 Harvey Road, Boscombe.
P R F	Pitt Rivers Museum, Farnham, Dorset.
R C	Russell Cotes Art Gallery and Museum.
W G W	W. G. Wallace, 61 East Avenue.

KEY.

- Round barrow
- Beaker
- Rusticated ware
- Flint dagger
- Oval flint knife
- Plano-convex flint knife
- Discoidal polished flint knife *or* Flake with ground edge
- Macehead
- Perforated axe-hammer
- Arrowhead—barbed and tanged
- ,, —triangular
- ,, —'petit tranchet' derivative


A B C D E F G H J K L M N O
1 2 3 4 5 6 7
DORSET
HANTS
R. Stour
R. Avon
R. Bourne
Poole Harbour
Edge of Plateau Gravel
Hengistbury Head
Scale
1 ¾ ½ ¼ 0 1 mile 2 miles 3 miles 4 miles 5 miles

Map of Bournemouth district, showing objects mainly belonging to the Early Bronze Age.

An Ecological Survey of the Plants and Animals of South Haven Peninsula, Studland Heath, Dorset: The Study of a Changing Environment.

By Capt. Cyril Diver, m.a., f.l.s., f.r.g.s.

Ecology, as it is understood to-day, is still a young science. Although in recent years rapid strides have been made in our knowledge of plant communities, the problems of animal ecology are still largely unexplored country. The main reason for this difference is that plants are sedentary organisms and allow the student, provided he can visit them at the appropriate periods of the year, to map their distribution and examine their populations to any degree of detail that may be required for the purpose in hand.

It has been said that ecology is a point of view rather than a separate science, and that, in fact, it may be described as scientific natural history. Broadly speaking, the aim of the ecologist is to determine what species live together and why they live in certain places rather than in others; that is, he seeks to elucidate both the physiological and sociological relationships of organisms to their physical and biological environments. Two lines of attack are open, the intensive study of particular species (autecology), or the general analysis of particular communities (synecology). In either case it is essential at the outset to determine and classify the types of habitat involved and the distinctive components of the communities that occupy them. Everyone recognises such major divisions as marram dunes, heath, marsh and woodland, and that the plants that grow in such places do so because of their fitness to develop in, or their capacity to resist, the peculiar physical conditions that characterise these habitats. Animals may also show the same direct relationship to the physical background, but more often the relationship is indirect, depending primarily on the nature of the plant carpet. Change is inherent in Nature, and the problems presented to the ecologist are essentially dynamic. An ecological survey must, therefore, take into consideration first the physical background, secondly the plant carpet, thirdly the animal population, and fourthly the nature and rate of change.

One of the many reasons that make South Haven Peninsula peculiarly suitable for such a survey is its remarkable history, which can be traced in considerable detail for the last 300 years. About the year 1600 the peninsula consisted only of a narrow tongue, not over 600 yards across at its widest, composed of sand, clay and gravel belonging to the Bagshot beds laid down in Eocene time. There is little doubt that in 1600, and for several centuries previously, the flora and fauna of the peninsula were of the simple type that characterise the rather damp acid heathland west of the motor-road to-day. During the 17th century some

change took place which started a steady eastward growth of the land surface, won from the floor of Studland Bay, by the building up of a series of blown-sand ridges against the old backbone of the Bagshot beds. In the northern half of the peninsula this followed what appear to be the general lines of development in such cases; each successive ridge was separated from the last one by a valley, or slack, producing a topographical structure analogous to sand ripples on a large scale. By comparing three remarkably accurate surveys dated respectively *circa* 1720, 1785 and 1849 with the modern 25-inch Ordnance survey (orignially made in 1886 and revised in 1900 and 1924) it is possible to affix reasonable dates to each of the three ridges and to determine that each new ridge has taken approximately 100 years to complete. Our information about the latest completed ridge which now stands facing Studland Bay is naturally the most detailed. In 1849 there was on the wide beach along the site of the present ridge no more than a bar of sand, which was covered by exceptional high tides. A similar bar, which will presumably form the base of the next ridge, can be traced on the beach to-day many yards to seaward of the existing marram edge.

The addition of these alternate ridges and slacks provided not merely new ground for the steady eastward march of such components of the original flora and fauna as could establish themselves in the new conditions, but also a series of entirely new types of habitat available for colonisation by species not previously represented on the peninsula. By an examination of the latest ridges and slacks it is possible to measure the rate of succession. For instance, in these conditions it takes about 50 years for the oldest slopes of a new ridge to reach a stage at which heather and ling (*Erica cinerea* and *Calluna*) are firmly established among the dune-grass flora of the preceding phase, and another 100 years before practically all the dune-grass elements have been driven out and an almost complete carpet of *Calluna* with only a little *Erica cinerea* has been formed.

The widening of the peninsula eastward produced another important physical result. Originally the eastward drainage of the old heath fell directly into Studland Bay. Little Sea was non-existent. By 1720 two separate arms of land had been formed, one growing from the south end northwards, the other from the north end southwards, so as partially to enclose a large double arm of the sea, which at low water must have presented much the same appearance as Poole Harbour to-day, except that sand and not alluvial mud covered the floor. By 1785 the Little Sea basin had become a tidal lagoon fed by freshwater drainage and salt water at each high tide. In 1849 salt tidal water was still regularly entering Little Sea, but by a different channel—southwards along the long slack that now separates the newest from the middle ridge. By 1878 this entrance had been largely blocked by the growth of the sea rush, *Juncus maritimus*. It was not until about 1900 that the direct incursion of sea water at exceptional

high tides finally ceased and Little Sea became the inland lake that it is to-day. The enclosure of this basin had a secondary effect of considerable importance to the area. The natural outlets for drainage water were blocked, causing an accumulation which not only raised the level of the lake but partially flooded the adjacent low ground and slacks. This tendency was counteracted to some extent by the construction, about the '70's or early '80's of last century, of a central cut, which ran from Little Sea to South Haven Point along the main valley between the oldest and the middle ridge. An immediate result of this work was to dry out the brackish marsh which had formed along the south half of this valley. By 1900 this artificial outlet was no longer fully effective, and in the next twenty years the 1400 yards of this valley passed from a comparatively dry habitat into freshwater marsh and even swamp. The flora and fauna that had entered as the brackish marsh dried were mostly driven out again and new communities took their place. We are able to watch and measure to-day an almost exact repetition of this succession following upon the construction (during 1932-33) of a new cut along the more recent valley to the east.

It is impossible here to deal with the interesting and rapid erosion along the Shell Bay shore which is eating away again land that has only recently been formed; but enough has been said to show the part played by physical change in the modification or obliteration of plant and animal communities and in the opening up of new ground for pioneer species. Two other factors have affected these movements. The curious absence of calcium carbonate from the blown sand of the dunes and the nature of the water in Little Sea have each imposed considerable limitations on the communities that have occupied these habitats, and they have also possibly affected the rates of colonisation.

Apart from these relatively slow physical factors, rapid cataclysms, such as human interference, fire and flooding, are responsible for considerable change and movement. For a period of years about four acres of old heathland was the site of a cottage and its surrounding cultivation (Plateau Enclosure); but for at least twenty and possibly thirty years this area has not been interfered with, and it is now mostly dominated by bramble scrub. Passing from the heath over the low bank into the enclosure is like passing into a different world. Most of the animals and plants are different and the number of species is greatly increased. On the surrounding undisturbed heath, which is what the enclosure originally was, there are fewer than 30 species of vascular plants, while within the enclosure there are as many as 111. Some ten years ago the present motor road was made, and in its verges and drainage ditches new habitats have arisen for many species. In sections where it passes through otherwise undisturbed heath it is now inhabited by between 60 and 70 species (of which a few are new entrants) of vascular plants, or more than twice the number present on the ground that borders it. It has

enabled animals, e.g., snails and grasshoppers, to spread from existing populations and colonise new loci. The recent, and otherwise disastrous, fires have provided much information bearing on the recolonisation of devastated areas by the original species, and on the occupation of empty spaces by different (adventive) species. On one patch of the burnt old heath no fewer than 18 species of plants were recorded which are never present in the natural community. In another part, near the harbour shore, ground that before the fire had been covered with *Erica tetralix* and the other associates of damp heath was occupied by salt-marsh plants like *Salicornia* (normally restricted to the mud of the inter-tidal zones, *Armeria, Atriplex, Beta, Spergularia, Statice* and *Suaeda maritima*; but these will disappear again as the normal damp heath community re-establishes itself. In other places, e.g., on the blown sand ridges, where conditions are different, recovery is characterised, not by a phase of adventive species, but only by the slow reappearance of the original inhabitants, though the proportions which they contribute to the recovering carpet may be different. In the established closed heath of the older ridges *Calluna* covers far more ground than does *Erica cinerea*; but in the open phases of recovery the latter gains considerably. These statements are based on the measurements obtained from some 900 quadrats, by which method the general problems of recovery are being studied.

Animal movements are often more striking. The retreat of many species before the advancing flames of a heath fire results in a considerable shift in the quantitative distributions. Colonist snails, for no known reason, moved, shortly after a fire, from their apparently adequate and unaffected habitat by the roadside on to the charred remains of the adjacent heath, where they would never normally live and from which they have since disappeared. After heavy rains I have seen the ridiculous attempt of dragonflies to occupy purely temporary rain puddles. A sudden and unexplained northward movement of chalk-hill blues, *Lycaena corydon,* presumably from the down a few miles to the south, resulted in a number of these butterflies wandering for several days on the peninsula, where they would never succeed in founding a colony. The careful recording of species in changing loci enables one to detect the approximate date of new arrivals. In one case we have been able to arrive at the time taken for several species of moths to find and utilize as food a large colony of *Salsola.* This plant has rapidly developed on a blanket of blown sand which in its turn had smothered and largely obliterated a Juncus-saltings community.

The work on the peninsula has abundantly confirmed what I had observed elsewhere, that the populations of even the most mobile animals are generally discrete units, or colonies, with more or less defined borders, and that the amount of movement outside these limits is not usually great. A striking case is that of a migratory dragonfly, known to fly the Channel, which, when it

settled one year on the peninsula, was to be found only in one clearly circumscribed locus. The amount of the less obvious movement, whether voluntary or involuntary, by occasional individuals from population to population can only be estimated by careful experimental work, such as the method used by tsetse-fly workers in Africa of catching, marking and releasing samples.

It is comparatively easy to understand how colonisation may be achieved by certain plants and winged insects; but it is far less easy with ground-living forms, such as snails, which have somehow found their way into new loci isolated in acres of country in which these species cannot and do not live. We can only assume that much of this type of colonisation is probably the result of involuntary transportation. Professor A. C. Hardy of Hull has developed a method of collecting small wind-borne insects in the upper air currents with surprising results. Oldham has shown that small snails may sometimes be carried in the plumage of ground-roosting birds. He also observed an involuntary mass movement which, had it not been unlucky, might have been very effective. On a perfectly calm day he found thousands of small animals, still alive, and mostly ground-living forms such as spiders, plant-bugs and beetles, being washed on to Studland beach by the gentle incoming tide. Some of the species identified suggest that the animals belonged to a heath community such as exists behind the outer ridge of dunes. What caused this huge disturbance is a mystery.

I have not attempted here to deal with more than one of the many fascinating aspects of the work now being done by those engaged on this survey, though we have still done little more than scratch the surface. Perhaps fifty different specialists working for several years might produce a fair picture of the complexity of life in such a varied area as South Haven Peninsula, and these would have to include not only a number of systematic botanists, zoologists and entomologists, but also geologists, geographers, physiologists, physicists, chemists and statisticians. In spite of this there is a large field open for the keen amateur who is prepared to treat his natural history scientifically.

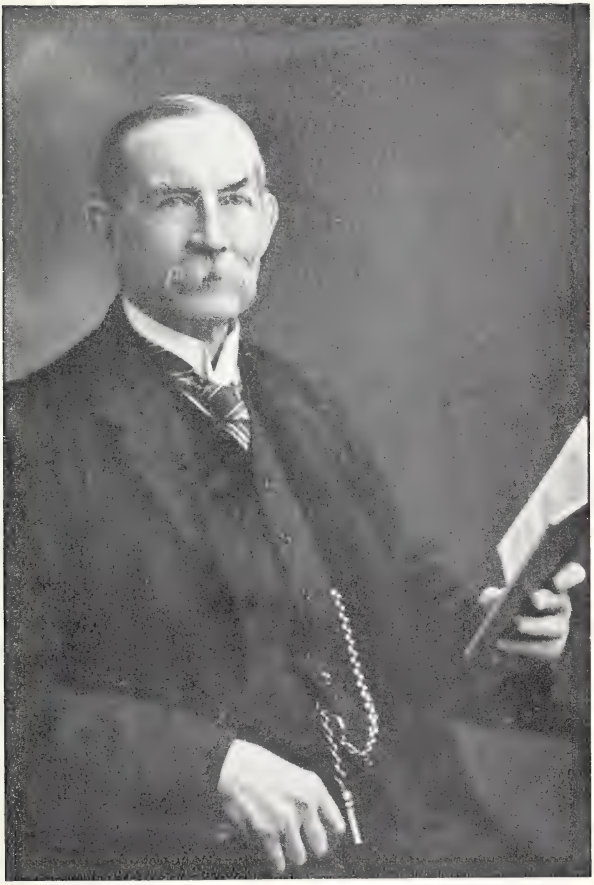
I should like to take this opportunity of recording my gratitude for help and information supplied by several members of this Society, and in particular to Mr. L. Beeching Hall who has unreservedly placed at the disposal of both Mr. Good and myself not only his wide knowledge of botany but also his detailed knowledge of the plants growing on the peninsula.

Obituary Notices.

Claude Lyon.

Born in Dublin in 1856, Mr. Lyon was taken as a child by his father, an Army captain, to India, where he spent seven years. Continuing his education in Germany, he afterwards moved to Malta, where his father's yacht had its headquarters, and from which they made frequent excursions in the Mediterranean from Gibraltar to Odessa. After his marriage in 1900 his travels ranged over the whole of the United States. During his life-time he accumulated an enormous stock of lantern slides which, coupled with his marvellous memory, enriched the Lectures which he constantly gave to the Society. He was not strictly a scientist, but his interests ranged over a wide field from Astronomy to Egyptology. Of his influence in the Society it is difficult to speak too highly. His world-wide travel made him peculiarly fitted for the position of Chairman of the Geographical Section, which he filled for 20 years. To this he added indefatigable work in the Library for 15 years. He was a member of the Council from 1914, Vice-President from 1918 and President in 1928.

To all this must be added his invaluable leadership in excursions to noted Country Houses and on a round of visits to centres of local industry, always with an air of quiet, modest efficiency and genial charm.



CLAUDE LYON.

BRITISH MUSEUM
NATURAL HISTORY

HENRY BACKHOUSE.

Henry Backhouse.

In early life Mr. Backhouse was interested in a great private banking concern in the North. Retiring from business in 1905, he settled in Bournemouth, and in the following year joined this Society. After serving for a short time as Joint Honorary Secretary, he was elected to the Council in 1908, and he became a Vice-President in 1916. His special interest lay in the Botanical Section. He had made a special study of Narcissi, evidence of which may be found in Vol. XIX of the Proceedings, and had practised hybridising with a success well-known to experts. As a leader on excursions his services were invaluable in naming rare trees and shrubs, and he was a joint contributor to articles in Vols. XI, XII and XIII of the Proceedings in which trees on the Horseshoe Common and in the Pleasure Gardens were identified and placed on accompanying plans.

His main recreation, as a young man, was mountaineering. He was an original member of the Alpine Club, and had the ascent of the Matterhorn to his credit long before it was harnessed and hackneyed. Such experiences in Switzerland and the Tyrol formed the substance of interesting lectures, too few in number, perhaps by reason of his innate modesty. He was rather shy and reserved, but his calm dignity and unfailing courtesy commanded the respect and admiration of all with whom he came in contact.

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COMPILED BY THE LATE MR. R. A. DE PAIVA.

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1918-25	REV. H. SHAEN SOLLY, M.A.
1905-11	A. W. THOMAS, M.D.
1905-16	J. ROBERTS THOMSON, M.D., F.R.C.P., J.P.
1905-6 — 1907-14	H. J. WADDINGTON, F.L.S.
1928-32	REV. C. O. S. HATTON, B.A., F.L.S.
1928-	HEYWOOD SUMNER, F.S.A.
1928-30—31-35—36-	HENRY BURY, M.A., F.L.S., F.G.S.
1929	J. H. RALPH SMYTHE, J.P.
1931-32	REV. A. G. YATES, M.A.
1932-34	DUKINFELD H. SCOTT, M.A., LL.D., F.R.S., F.G.S., F.L.S.
1932-	MISS MARCIA PENROSE, B.SC.
1932-33—34- ...	REV. F. C. R. JOURDAIN, M.A., F.Z.S., M.B.O.U.
1932-	GEORGE BRUMELL, A.R.I.B.A. (Retd.)

Chairmen of Committee

1904-5	J. Roberts Thomson, M.D., F.R.C.P., J.P.
1905-6	J. E. Liddiard, F.R.G.S.
1906-7	H. J. Waddington, F.L.S.
1907-10	W. T. Ord, F.G.S.

Chairmen of Council

1910-11	W T. Ord, F.G.S.
1911-14	Sir Daniel Morris, K.C.M.G., J.P., M.A., D.SC., D.C.L., F.L.S.
1914-Dec. 15 ...	G. G. Hamilton, M.A., F.R.C.S.
1916-17	Sir Daniel Morris, K.C.M.G., J.P., M.A., D.SC., D.C.L., F.L.S.
1917-Feb. 19 ...	W. Munn Rankin, M.SC., B.SC.
1919-Mar. 20 ...	Sir Daniel Morris, K.C.M.G., J.P., M.A., D.SC., D.C.L., F.L.S.
1920-22	Hubert Painter, B.SC, F.C.S.
1922-27	J. H. Ralph Smythe, J.P.
1927-32	Rev. C. O. S. Hatton, B.A., F.L.S.
1932-	Henry Bury, M.A., F.L.S., F.G.S.

Deputy Chairmen of Council

1911-14	G. G. Hamilton, M.A., F.R.C.S.
1914-Feb. 16 ...	Henry Backhouse, F.R.H.S.
1916 Mar.-Nov. 16	R. O'B. Furlong, C.B., J.P., M.A.
1916 Dec.-17 ...	W. Munn Rankin, M.SC., B.SC.
1917-19	F. G. Penrose, M.D,, F.R.C.P., F.Z.S., M.B.O.U.
1919-20	Hubert Painter, B.SC., F.C.S.
1920-22	J. H. Ralph Smythe, J.P.
1922-27	Rev. C. O. S. Hatton, B.A., F.L.S.
1927-28	J. H. Ralph Smythe, J.P.
1928-29	Claude Lyon
1929-31	F. G. Penrose, M.D., F.R.C.P., F.Z.S., M.B.O.U.
1931-32	Henry Bury, M.A., F.L.S., F.G.S.
1932-	Rev. F. C. R. Jourdain, M.A., F.Z.S., M.B.O.U.

Hon. Treasurers

1904-8	A. D. George.
1908-	G. Brumell, A.R.I.B.A.

Hon. Secretaries

1904-7	Miss C. Agnes Rooper and J. R. L. Dixon, M.R.C.S., L.R.C.P.
1907-8	J. R. L. Dixon, M.R.C.S., L.R.C.P., and H. Backhouse, F.R.H.S.
1908-10	J. R. L. Dixon, M.R.C.S., L.R.C.P., and Col. E. E. Markwick, C.B., C.B.E., F.R.A.S.
1910 Sept.-Oct. ...	J. Donkin, F.R.I.B.A.
1910-11	H. Le Jeune.
1911 Nov.-Feb. 1912	Sir A. Brooke Pechell, bart., M.B.
1912 Apr.-Mar. 1914	T. Michell, M.I.C.E.
1914 Apr.-Oct. ...	R. A. de Paiva.
1914 Oct.-July 1917	R. A. de Paiva and T. Capper, M.A., B.SC.,
1917 July-25 ...	R. A. de Paiva.
1925-26	R. A. de Paiva and Rev. A. G. Yates, M.A., R.N.,
1926-31	Rev. A. G. Yates, M.A., R.N.
1931-32	M. Hellier, O.B.E.
1932-36	R. Quick, F.S.A. (Scot.)
1936-	W. J. Woodhouse, A.C.P.

Hon. Assistant Secretaries

Apr.
1911-1912 ... T. MICHELL, M.I.C.E.
May Mar.
1912-1914 ... R. A. DE PAIVA.
1917-1918 ... G. G. GRACE, B.SC., A.R.C.SC., F.E.S.
1919-1920 ... W. G. BOUL, M.A., LL.D., D.C.L.
1920-1936 ... W. J. WOODHOUSE, A.C.P., M.I.H.
1931 ... ... M. HELLIER, O.B.E.

Hon. Financial Secretary

1905-8 ... ... J. H. SCOTT, M.E., M.I.M.C.E.

Assistant Secretary

1909-36 ... ... J. F. SPENCER.
1936- ... ... MISS K. A. HUNKIN.

Hon. Librarians

1908-1909 ... A. SCOTT, B.A.
1909-1911 ... F. I. COOKE.
1911-1912 ... W. MUNN RANKIN, M.SC., B.SC.
1913-1919 ... H. J. ELLIS.
1919 Oct.-
Mar. 1926 J. OMER COOPER, F.E.S.
1920 Mar.-
Jan. 1921 REV. C. O. S. HATTON, B.A., F.L.S.
1921 Jan.-1936 ... CLAUDE LYON.
1923-1929 ... MISS A. G. VEALE, Hon. Assistant Librarian.
1929-1936 ... S. WHITAKER, Hon. Assistant Librarian.
1936- ... ... S. WHITAKER.

Hon. Editors

1911-12 ... ... G. E. J. CRALLAN, M.A., M.B., M.R.C.S.
1912-20 ... ... HUBERT PAINTER, B.SC., F.C.S.
1920-25 ... ... F. B. TAYLOR, B.A.
1925- ... ... J. R. WHITE, M.A.

Hon. Curators

1917 Jan.-
July 1921 W. G. WALLACE.
1921-Dec. 1922 ... No Curator.
1923 Jan.-Nov. ... REV. C. O. S. HATTON, B.A., F.L.S., and HOWARD LACEY, B.A.
1923 Dec.-32 ... REV. C. O. S. HATTON, B.A., F.L.S.
1932- ... ... BERNARD GORTON, M.R.C.V.S., M.P.S.

Chairmen of Sections

Antiquarian

1904-7 ... ... A. W. THOMAS, M.D., M.R.C.S.

Archæological and Historical

1907-8 ... ... A. W. THOMAS, M.D., M.R.C.S.
1908-Feb. 14 ... G. BROWNEN, F.C.S.
1914 May-Nov. ... REV. CANON T. E. USHERWOOD, M.A.
1914 Dec.-24 ... REV. H. SHAEN SOLLY, M.A.
1924-26 ... ... COL. J. R. DODD, M.D., F.R.C.S.
1926-33 ... ... R. K. CARDEW, B.A.
1933-34 ... ... A. S. HEMMY, M.SC.
1934- ... ... J. CAMERON, M.D., D.SC.

Deputy Chairmen

1922-24 ... ... COL. J. R. DODD, M.D., F.R.C.S.
1925-26 ... ... R. K. CARDEW, B.A.

Astronomical

1920-24	Col. E. E. Markwick, C.B., C.B.E., F.R.A.S
1925-26	G. E. J. Crallan, M.A., M.B., M.R.C.S.
1928-29	L. B. Benny, M.A., B.SC., F.R.A.S.
1929-31	J. A. Formoy, F.R.A.S.
1931-	W. Goodacre, F.R.A.S.

Deputy-Chairmen

1927-28	L. B. Benny, M.A., B.SC., F.R.A.S.
1931	W. Goodacre, F.R.A.S.

Mathematical

1921-22	W. H. Scott, M.A
1922-24	B. M. Peek, M.A., F.R.A.S.

Astronomical and Mathematical

1924-25	B. M. Peek, M.A., F.R.A.S.

Botanical

1904-5	Rev. E. F. Linton, M.A., F.L.S.
1905-7	J. F. Rayner, F.R.H.S.
1907-May 18 ...	Miss C. Agnes Rooper.
1918-22	Rev. C. O. S. Hatton, B.A., F.L.S.
1922-26	Howard Lacey, B.A.
1926-27	Rev. C. O. S. Hatton, B.A., F.L.S
1927-	L. Beeching Hall, F.L.S.

Entomological

1914-15	R. Beck, F.E.S.
1915-Dec. 19 ...	F. G. Penrose, M.D., F.R.C.P., F.Z.S., M.B O.U.
1920-Jan. 26 ...	J. Neale, B.A.
1926-29	Howard Lacey, B.A.
1929-33	Alan Druitt, F.E.S.
1933-34	P. M. Bright, J.P.
1934-35	T. E. Belcher.
1935-36	G. E. J. Crallan, M.A., M.B., M.R.C.S.

Geographical

1908-10	J. E. Liddiard, F.R.G.S.
1910-11	A. Scott, B.A.
1911-16	G. de Castro, M.R.C.S.
1916-36	Claude Lyon.
1936-	W. J. Woodhouse, A.C.P.

Geological

1904-5	Rev. G. D. Shenton, B.A.
1905-6	The Marquis de Trevelec.
1906-14	W. T. Ord, F.G.S.
1914-17	W. Munn Rankin, M.SC., B.SC.
1917-18	H. Kidner, F.G.S.
1918-20	W. Munn Rankin, M.SC., B.SC.
1920-23	W. J. Woodhouse, A.C.P., M.I.H.
1923-	Henry Bury, M.A., F.L.S., F.G.S.

Photographic

1905-8	Councillor R. Y. Banks.
1908-10	C. J. Hankinson, J.P.
1910-12	E. W. Barlow, F.R.A.S.
1912-13	G. Brumell, A.R.I.B.A.
1913-14	No Chairman.
1914-16	R. Y. Banks.

Photographic and Record

1916-25	R. Y. Banks.
1925-30	W. Dieselhorst, A.M.I.C.E.
1930-	S. Whitaker.

Physical

1904-26	Hubert Painter, B.Sc., F.C.S.
1928-29	G. E. J. Crallan, M.A., M.B., M.R.C.S.
1929-33	Miss Marcia Penrose, B.Sc.
1933-	W. H. Marsh, B.Sc.

Deputy Chairman

1926-28	G. E. J. Crallan, M.A., M.B., M.R.C.S.

Zoological

1904-8	G. E. J. Crallan, M.A., M.B., M.R.C.S.
1908-10	A. W. Thomas, M.D., M.R.C.S.
1913-14	W. Munn Rankin, M.Sc., B.Sc.
1922-31	F. G. Penrose, M.D., F.R.C.P., F.Z.S., M.B.O.U.
1931-	Rev. F. C. R. Jourdain, M.A., F.Z.S., M.B.O.U

Microscopical

1909 Mar.-10 ...	J. R. L. Dixon, M.R.C.S., L.R.C.P.
1913-14	H. B. Wells, F.R.M S.
1922-30 ...	F. B. Taylor, B.A.
1930-31	F. W. Parrot.
1931-35	S. Whitaker.
1935-	M. McDougall, M.B., B.S.

Zoological and Microscopical

1910-11	H. B. Wells, F.R.M.S.
	A. W. Thomas, M.D., M.R.C.S.
1911 Mar.-12 ...	G. E. J. Crallan, M.A., M.B., M.R.C.S.
1911-13	H. B. Wells, F.R.M.S.
1914-16	T. B. Goodall, F.R.C.V.S., F.L.S.
1916-22	F. G. Penrose, M.D., F.R. C.P., F.Z.S., M.B.O.U.

Elected and co-opted Members of Council.

Title changed from Committee in 1910.

Many of these also had seats on the Council ex-officio either before or after their election or co-option. Their names are marked*

1905-7	Atkins, Dr. F.
1906—1908-36 ...	*Backhouse, H., F.R.H.S.
1914-15	*Banks, R. Y.
1905-6	Bax, P. B. Ironside.
1904	Bond, Dr. Eleanor.
1932-33	Borrett, Surg.-Capt. G. G.
1919-20	Boul, Mrs.
1930-	Broad, F.
1904-8	*Brownen, G., F.C.S.
1906-8	*Brumell, G., A.R.I.B.A.
1906-8	Buckland, Dr. Frank.
1930-	Burton, E. St. John, F.L.S., F.G.S., F.Z.S.
1921-22—1933-34	*Cardew, R. K., B.A.
1909-11	Chandler, S. Whitty, B.A.
1905-6	Clements, Lt.-Col. W. G.
1904	Clift, Dr.
1921-28	Curme, Mrs.
1905-10	Curtis, W. Parkinson, F.E.S
1936-	De Castro, H.
1923-26—1927-30 .	*Dodd, Col. J. R., M.D., F.R.C.S.
1914-16	Druitt, J., J.P.
1916-17	Dyer, J. Herbert.
1919-25	*Ellis, H. J.
1910-30	French, J. M.
1929-	Fryer, Miss C. H.
1914-17	Furlong, R. O'B., C.B., M.A.
1919-Aug. 21 ...	*George, A. D.
1904	Giles, Dr.
1904-6	*Goodall, T. B., F.R.C.V.S., F.L.S.
1918-20	Gosse, W., M.D., D.P.H.
1921-23	Gray, Arthur.
1910-15	Hamilton, G. G., M.B., F.R.C.S.
1916-18 — 1922-23	*Hatton, Rev. C. O. S., B.A., F.L.S.
1911-16	Hill, S. McCalmont, D.C.L.
1926-30	Hurry, J. B., M.A., M.D.
1916-19	Jeffery, T. J. P.
1930-31	*Jourdain, Rev. F. C. R., M.A., M.B.O.U., F.Z.S.
1906-10 — 1911-18	*Le Jeune, H.
1926-33	Longbottom, F. W., F.R.A.S.
1933-	Lowther, F. L.
1914-16	*Lyon, Claude.
1907-8	*Markwick, Col. E. E., C.B., C.B.E., F.R.A.S.
1932-3	*Marsh, W. H., B.SC.
1907-8	Maude, W. C., J.P.
1935-6	McDougall, M., M.B., B.S.
1931-35	Morrell, C. Conyers, M.D., F.R.A.S.
1910-16	*Morris, Sir Daniel, K.C.M.G., J.P., M.A., D.Sc., LL.D., F.L.S.
1910-11	*Michell, T., M.I.C.E.
1916-19	*Neale, Joseph, B.A.
1905-6	*Ord, W. T., F.G.S.
1904	Parish, Miss
1932-3	Pattinson, Dr. T. W.
1915-16—31-32 ...	*Penrose, F. G., M.D., F.R.C.P., F.Z.S., M.B.O.U.
1933-	*Penrose, Miss M., B.SC.
1917-18	*Rankin, W. Munn, M.SC., B.SC.
1904	Reid, C. J.

1931-32	RICHEY, H. A., B.A.
1936-	ROBERTSON, W. G. A., M.D., D.SC.
1919-32	ROOKE, MISS S. G.
1918-19	ROTHWELL, MRS.
1908-9	SCOTT, A., B.A.
1908-31	*SCOTT, J. H., M.E., M.I.M.C.E
1904-26	SHERRING, R. VOWELL, F.L.S.
1920-27	SIMPSON, REV. E. J. DOUGLAS, M A
1916-29	SMYTHE, J. H. RALPH, J.F.
1923-	*SPENCER, J. F.
1905-10	STUBBS, G. M.
1918-20	*TAYLOR, F. B., B.A.
1931-	WADLOW, H. J.
1921-23	*WALLACE, W. G.
1907-10	*WELLS, H. B., F.R.M.S.
1931-	WETHERELL, MISS S.
1930-31	*WHITAKER, S.
1906-7 — 1916-20 1923-36	*WOODHOUSE, W. J., A.C.P., M.I.H.
1932-	WREN, G. G.

Various Committees

Chairman: REV. C. O. S. HATTON, B.A., F.L.S.

1915 Dec.-	
Oct. 1919	General Policy of the Society.
1919 Nov.-	
Feb. 1920	Housing.
1920 Feb.-	
Oct. 1922	Housing and Finance
1922-32	Finance and General Purposes.

Library Committee

Chairmen

1918 Mar.-	
Oct. 1918	G. G. GRACE, B.SC., A.R.C.SC., F.E.S.
1918 Nov.-	
Oct. 1919	HUBERT PAINTER, B.SC., F.C.S.
1919 Nov.-32 ...	REV. C. O. S. HATTON, B.A., F.L.S.
1932-	G. E. J. CRALLAN, M.A., M.B., M.R.C.S.

Museum Committee

Chairmen

1917-1921 ...	W. G. WALLACE.
1921-32	REV. C. O. S. HATTON, B.A., F.L.S.
1932-	B. GORTON, M.R.C.V.S., M.P.S.

Hon. Auditors.

1906-9	H. SUTTON and K. H. MUNDELL.
1909-14	H. SUTTON and E. BICKER.
1914-15	E. BICKER and H. BACKHOUSE, F.R.H.S.
1915-17	E. BICKER and E. W. BARLOW, F.R.A.S.
1917-28	E. BICKER and C. H. BLACKETT.
1928-31	E. BICKER AND SON, and F. BROAD.
1931-	F. BROAD and J. C. WOODS.

Council for the Current Year, 1936-37.

THE OFFICERS, AND CHAIRMEN OF SECTIONS (*ex-officio*)
F. BROAD
E. ST. JOHN BURTON, F.G.S., F.R.S.A.
H. DE CASTRO.
MISS C. H. FRYER
F. L. LOWTHER
MISS M. PENROSE, B.SC.
W. G. A. ROBERTSON, M.D., D.SC.
J. F. SPENCER
H. J. WADLOW
MISS S. WETHERELL
G. G. WREN.

Committees for the Current Year.

Finance and General Purposes

H. Bury, M.A., F.L.S., F.G.S. (Chairman)
The Hon. Treasurer (G. Brumell, A.R.I.B.A.)
F. Broad
Rev. F. C. R. Jourdain, M.A., F.Z.S., M.B.O.U.
The Hon. Secretary (W. J. Woodhouse, A.C.P.)
G. E. J. Crallan, M.A., M.B., M.R.C.S.
J. R. White, M.A.
S. Whitaker
J. Cameron, M.D., D.SC.

Library

F. Broad
G. E. J. Crallan, M.A., M.B., M.R.C.S.
L. Beeching Hall, F.L.S.
S. Whitakex (Hon. Librarian).
J. R. White, M.A.

Museum

The Hon. Curator (Chairman) (B. Gorton, M.R.C.V.S., M.P.S.)
Chairman of Archæological Section (John Cameron, M.D., D.SC.)
Chairman of Botanical Section (L. Beeching Hall, F.L.S.)
Chairman of Entomological Section
Chairman of Geological Section (Henry Bury, M.A., F.L.S., F.G.S.)
Chairman of Zoological Section (Rev. F. C. R. Jourdain, M.A., M.B.O.U., F.Z.S.)
G. E. J. Crallan, M.A., M.B., M.R.C.S
E. St. J. Burton, F.G.S., F.R.S.A.

Editorial

The Hon. Editor (Chairman) ((J. R. White, M.A.)
The Hon. Treasurer (G. Brumell, A.R.I.B.A.)
The Hon. Secretary (W. J. Woodhouse, A.C.P.)
G. E. J. Crallan, M.A., M.B., M.R.C.S
Henry Bury, M.A., F.L.S., F.G.S.
S. Whitaker

Garden

Chairman of Botanical Section (L. Beeching Hall, F.L.S.)
F. L. Lowther (Chairman)
Miss S. Wetherell
H. J. Wadlow
Miss Fryer
Mrs. Richards

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